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# INFORMATION TECHNOLOGY OUTSOURCING IN AN E-COMMERCE ENTERPRISE CASE EMMA MATRATZE UK

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<b>Abstract</b>		
<p>This research reviews various studies of Information Technology Outsourcing (ITO)'s practice and offers substantial academic acknowledgement and measurement tools for the commissioner in the process of making IT related decisions. The paper is written with the vision of producing a credible source of reference for the case company, Emma Matratze UK, which has been perplexed and bewildered before many considerations serving the target of improving internal IT performance. Emma Matratze UK is an e-commerce enterprise supplying box spring beds, slatted frames, mattresses, pillows and other associated sleeping products. Despite witnessing an impressive growth and gradually widening its slice of the sleeping market portion in the UK, Emma's internal logistics operations are still managed less effectively in an outdated technology platform. One of the crucial matters is that the company is struggling with controlling and optimizing customer experience journey by improving IT operation. This thesis examines two choices: building an in-house IT team versus using IT outsourcing services. The research is performed using interpretivism philosophy with qualitative research method. Data collection plans are: personnel interviews, case studies and data analysis performance. The chosen interviewees are company's staffers holding different positions and being responsible for business development, internal operation and customer service. Apart from company's employees, an interview with an external software developer contributes valuable perspectives in regard of popular client's bothersome matters and challenges in upgrading software. Two case studies are presented to reflex how the practice is performed in a large scaled company and a small sized business. Basing on gathered data and applied methodology, bridging with logical sequence of analysis, the thesis concludes that IT outsourcing is proved as the more efficient alternative for Emma Matratze UK at this time. After the declaration of following ITO approach, the thesis continues with proposed implementation plans and instructions to support case company in putting the decision into effect. Further studies and developments on this topic are highly encouraged.</p>		
<b>Keywords</b>		
IT outsourcing, logistics technology, efficiency, solution, IT talent, software developer		

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## **1 INTRODUCTION**

### **1.1 Introduction to the topic of the thesis**

Outsourcing is amongst the most popular and efficient business strategies which benefits not only small and medium enterprises but also large organizations. For instance, many renowned companies in electronic, apparel and human resource industries today have been adopting this practice, namely Apple, who outsources its production line to Foxconn, whose manufacturing site is located in China and Nike, who outsources its garment factories to many destinations including Vietnam, Taiwan and South Korea (Soni 2018). The strategy undeniably offers plenty of advantages for the practitioners such as cost and time efficiency, specialization enhancement, access to resources unavailable internally and many others, which will be thoroughly discussed in the following chapters. There have been many articles and researches revolving around this topic, significantly related to information technology outsourcing (ITO) and these academic resources have largely inspired conducting this research. In the MIT Sloan Management Review, Earl (1996) claimed outsourcing IT solutions had been a trend in the 1990s and convinced ITO as an effective cost-cutting method, parallelly created favourable conditions for businesses to focus on core systems, not the total application portfolios. Additionally, Lacity (2009, 130-146) expressed the importance of having well-rounded understanding on ITO; extracted insights academics had identified for this practice were also reanalysed meaningfully in her work.

### **1.2 Research statement**

This research is based on the awareness of a less effective logistics operational system which is a result of a shortage of high-skilled information technology (IT) personnel. The purpose of this study is to develop a complete understanding about both utilizing IT outsourcing services and forming an in-house IT department in order to ultimately determine a superior solution for the commissioner. At the time, adopting information technology outsourcing services is generally defined as having a third party to develop and manage a digital operational system. Meanwhile, building an information technology department is

attracting talents from labour market to locate locally working on developing and optimizing the current software system or building software for the company. The questions below will serve as guidance for the implementation of this research:

1. What are the advantages and disadvantages of information technology outsourcing and hiring in-house developers?
2. Given the situation of Emma Matratze UK, which option will be more appropriate and applicable?
3. What are the grounds planning for the implementation of the choice?

The fundamental objective is to introduce a sufficient comparison between adopting information technology outsourcing services and forming a team of developers working on-site. Hence, the two major topics will be discussed in this research obviously are IT Outsourcing (ITO) and In-house IT. The author will present her findings about pros and cons between the two topics, analyse them and finally, bring out the applicable strategic solution for the commissioner. Lastly on this thesis, the author will demonstrate proper action plans and suggest successful practices and processes in order to put the decision in practice. This thesis will only concentrate on Emma Matratze UK and will leave out anything related to Bettzeit Groupe, Emma's mother company.

### **1.3 Background**

Bettzeit Groupe, in the other name Bettzeit GmbH, was founded in 2013 as an online retailer, based in Frankfurt am Main, Germany. Specializing in sleeping products, Bettzeit Groupe owns three different brands available in 11 countries mostly in Europe and North America. They are Emma Matratze, Dunlopillo and Dormando with an utmost mission of providing better sleep for everyone at any age. Their predominant products consist of box spring beds, slatted frames, mattresses and pillows. In addition, related products such as bedlinens, blankets, duvets and other beddings are also available as impulsive buying items accounting for a small portion in the company's revenue. Among mentioned brands, Emma is one of the most favourite mattress suppliers in central Europe, established in 2015. Even though having considerable number of competitors in the same field, namely, Casper, Simba and Eve, Emma is very proud of their

brand which is characterised by being made of high-quality materials, fitting for all body types and all kinds of sleeping positions accompanying with reasonable price range (Rivera 2018). Emma won *Which? Best Buy Mattress 2018* and the company was ranked as the fastest-growing start-up in Europe in the same year.

Despite gaining many international awards and noticeable market share, Emma's internal logistics operation is still manually managed which leads to inefficiency of time management and constrains potential productivity. The company as other e-commerce businesses, primarily operates digitally on the internet with the help of technology. To Emma, technology truly plays a determinative and imperative role in its business model. As a matter of fact, most of Emma's business activities are executed online, from displaying products, customer service to managing order and transactions. Emma Matratze UK in particular, does not own any manufacturing sites, instead, it outsources production through partnership with trustworthy local companies. Furthermore, Emma's products are manufactured and delivered to orders. The payments must be received or guaranteed before the company sends orders to the suppliers. The mattresses are designed in Germany and produced in the UK since the customers are likely to prefer the products made in the country. Therefore, internal technology functions remarkably decide whether Emma UK's operation runs smoothly and productively or not.

The company's software system was developed from an open source platform. This technology has been developed since the beginning days Emma UK enjoined the mattress and bed market. Generally speaking that current technology and software that Emma UK is using is mostly the same as when the company started. The current software supports Emma Matratze vastly and sizably in its daily operation in dealing with customer inquiries, placing orders to suppliers and handling after-sales activities such as deliveries, returns, exchanges and donations. Although, it is evaluated that functioning sufficiently and the company faces no apparent problem which could interfere its operation. Yet, it is also believed that Emma could implement more advanced technologies that their opponents are presumably using to maximise competitive advantages,

particularly in enhancing customer service productivity, reducing information tracking time and minimizing payment procedure journey. To successfully achieve these goals, decisive questions to be addressed here are:

1. Should Emma either keep the current software then implement further renovation and extensions that respond to company's needs; or develop a new system from scratch; or purchase a new software from a different vendor?
2. Should Emma outsource the activity concluded from the question 1. to a third-party company or establish an in-house IT team to carry out this project and any future IT matters within the company?

The growth of sleeping products market has significantly increased lately. This is measured by the positive patterns in Emma Matratze's total sales over the years. Plus, consumers are prone to pursue healthier lifestyle and more aesthetic designs in their households. Owning high-quality beds and mattresses not only supports their essential sleeps and physical conditions but also creates modern vibes in living surroundings. This potential market associating with many promises and expansions ahead hastens the urge for Emma to find the best solution to accelerate business operation and aim for being the best choice among competitors.

According to Benjamin Rivera, the Chief Executive Officer of Emma Matratze UK, he believed that the main problem is the lack of IT department where they can manage and maintain the system for handling orders and customer data in effective manner. Nonetheless, this may neither be the perfect time for Emma to establish an IT department side by side nor build a new IT system from scratch due to cost efficiency and a few other issues. Emma is considering either to outsource technology solution service from a third party or to recruit in-house developers to customise present software to company's needs.

The author knew the commissioner when she was offered an internship opportunity in their Business Development department in spring 2018. Despite of spending a short time there, she had the chance to experience enormous changes in Emma's business operation at the time, in which the company



stopped their partnership with an old supplier and built strategic relationship with new producers. As mentioned above, Emma does not manufacture products by themselves; instead, they design and test products in-house, then outsource the production function to local producers. The first quarter of 2018 witnessed the change in input production stage, which caused plenty of problems regarding to customer satisfaction, stock shortage, quality consistency, communication and delivery. It was believed that the capability of the current IT system does not meet the expectation for data processing which generated long waiting time for the system to update and retrieve customer information. In this thesis, the author intends to analyse whether outsourcing the software platform to a third party is a wise solution for Emma or not. Key indicators will be scrutinised and when the analysis result is finalised, strategic plans and recommendation shall be presented. As a growing company, Emma wants to become a popular brand when customers think of bedding products, hence, improving logistics operation via IT platform is worth to be pondered on. This research shall be useful for Emma to have a closer view in this matter, and after that, to be able to construct a strong chain of supply to avoid risks and broaden productivity and effectiveness in their operation.

## **2 METHODOLOGY**

The research will be carried out based on interpretivism philosophy so that it can provide in-depth acknowledgement and situation of the company from different social perspectives. To Hughes (2003, 12), the interpretivist approach examines culturally derived and historically situated interpretations of the social world which can be understood that social factors are the subjects forming the outcomes of an event. The philosophy orients a research to look for cultural and social perspectives and study thoroughly the events along with practices that were experienced in the past. Here, social aspects vary from one individual to another, the differences in the way of thinking are primarily fundamental which lead to certain results, not others. And by this approach, the researcher is able to interpret the contextual observations by deploying data collected from interviews diversely. Meanwhile, the author of this thesis was a part of Emma Matratze, thus, has obtained essential insights and, more crucially, has experienced how

important it is to improve IT platform for better business operation. Moreover, it is possible for her to get in touch with the company's executives and employees to carry out personal interviews in order to gain different viewpoints about the problem. This philosophy reflexes the best how knowledge is going to be developed in the thesis. Also, by adopting this alternative, the author can relate and analyse common practices and strategies extracted from case studies, in which previous companies succeeded in solving likewise problems for commissioner's acknowledgement.

Concepts of IT outsourcing and in-house IT will open the content of the thesis and following to that, data and opinions collected from interviews will be analysed based on what has been discussed in the theory segment. Then, conclusions about applicability of either approaches toward Emma's case will be affirmed. And if there are constructive amendments on theories or exceptions of theories while the research is conducted, these findings will be included for Emma Matratze's information.

This thesis follows qualitative methodology due to the fact that the data collected for analysis adheres to non-numeric fashion (Sauders et al., 2009, 480). Indeed, information is gained by reason of asking questions bearing personal perspectives and performing observations within the enterprise. Through opting for this methodology, the author conducts interviews and presents case studies to gather variety of different data sources to fulfil the methodology's nature's requirements.

In this scenario, multi-method qualitative study will be the most suitable research choice because the thesis will include different types of qualitative tools such as case studies, data from previous researches and interviews. Accordingly, inductive research approach will be applied in this study with the aim of designing strategy for the case company based on observations and acknowledgement of common processes. From reasoning particular examples, it's possible for the author to generalise and craft a useful formula to solve commissioner's difficulty. The author decides to present grounded theories, analyse case studies within the

research as these strategies will meet both the philosophy requirements and ability of orienting outcomes to a proper solution.

As this research will be conducted within not a long period of time to witness any changes, cross-sectional approach is preferable to understand perspectives of people from different backgrounds. As later in the interview section, this part will be done with several people working in the company, holding different positions and the amount of time that they have been in the environment varies.

As mentioned, the author worked in the enterprise hence she observed and experienced difficulties occurred. In order to enlighten the problem, the author wants to conduct interviews with employees working directly with suppliers, customers and contractors to acknowledge company's situation in detail and what do they prefer to improve logistics operation via technology platform. Besides, executive interviews are taken into consideration as essentially, the problem needs to be approached from different views. Apart from that, two case studies will be illustrated in the research to find similarities in situation. The author wants to analyse the problem in different contexts to find transferability of the solutions, from there, suggestions formed to benefit commissioner are more trustworthy.

Author's findings relating to facts, data and figures provided by the commissioner to demonstrate statement can be examine if needed to gain confirmability. The author intends to conduct a number of interviews as a triangulation method to get multiple perspectives to deliver data or opinion consistency as expected. The decisions and conclusions made are based upon many approaches to prove findings credible. The solution yielded after analysing segment is without an exact estimation of expense for the project due to Emma's consideration of disclosing financial situation. Therefore, the result of the thesis could be more hypothetical and debatable.

### **3 INFORMATION TECHNOLOGY OUTSOURCING**

#### **3.1 The nature of Outsourcing**

Over the years, outsourcing is one of the most concerned approaches to business owners, even though this business strategy has already existed and bloomed commencing 20 years ago. Outsourcing plays a vital role for development of all basic and advanced industries. In particular, outsourcing has brought to world economy competitive advantages, reduced bulkiness in operation and enhanced specialization for businesses. In fact, outsourcing in the US has emerged as a fundamental business practice in small and large companies (Outsourcing Institute 2000) and the global market size of outsourced goods has grown from \$45.60 billion to \$104.60 billion in fourteen years since 2000 (Statista 2018). To Friedman (2005) outsourcing is one of the flatteners making this world flat, which also means outsourcing is an element pushing globalization, creating a common playground in terms of commerce where all players all around the globe have equivalent competitive opportunity.

In the late 1950s, the popular business model at the time was under reconsideration for improvement in order to take the most advantages with the goals of expanding markets and increasing benefit (Handfield 2006). Initially, this model was actually a type of traditional ownership where businesses handled all of their operation and managed all resources by themselves. Until 1970-1980, globalization dominated and so many companies could not compete to the other giants, even collapsed; this is because of greatly bulky operational systems coupled with meaninglessly cumbersome administration. Companies started to change as they developed new business strategies which was basically focusing on their expertise capacity and outsourcing the rest. The last decade of the twentieth century witnessed companies implementing cost-cutting measures to decrease their expenses and boost profitability. By applying outsourcing transactional activities and focusing on core competences as well as maintaining legacy systems (Earl 1996), many companies found the cure for their own financial problems and operational procedures. In later chapter, a case study is demonstrated showing a company named General Motor which was able to bring

down its IT expenditure from about \$5 billion a year in 1998 to about \$3 billion a year in 2003 (Chaturvedi 2005, 1). As a matter of fact, the popularity of outsourcing since then has been unquestionably enlarged due to the benefits this strategy has brought. Eventually, outsourcing has become a common practice for many firms nowadays. Instead of persevering in owning everything as earlier, firms today concern more about cooperating with other experts to bring the best outcomes.

Many scholars and economists have defined outsourcing and their ideas are concurrent that bear relative meanings. To generalise, outsourcing is characterised as the action of transferring a part of activities previously conducted in-house, to a third party intentionally and calculatingly (van Weele 2013, 175). Similarly, Overby (2017), a researcher specializing in outsourcing, describes “outsourcing is a business practice in which services or job functions are farmed out to a third party”. The nature of outsourcing is a deal, that a company has another company perform one or many activities for them, however, the company still has either partial ownership, controllability or responsibility primarily upon outsourced activities. The definition of outsourcing concluded by Axelsson and Wynstra (2002) is valued as the most thorough. They brought the concept of outsourcing as “the decision and subsequent transfer process by which the activities that constitute a function, that earlier has been carried out within the company, are instead contracted from an external supplier”. Usually, outsourcing is favoured when a business does not perform certain activities effectively at where the cost of production or operation isn't optimal, productivity and capacity are low, technology and infrastructure are obsolete or unable to be upgraded. Furthermore, outsourcing activity is invested and carried to dodge costs and expenses, tax, overhead and equipment, for example.

Also mentioned parallelly with outsourcing, offshoring and contracting are models which are given recognition and used popularly. Even though these concepts are somewhat related, in reality, their practices are slightly distinct. Contracting or subcontracting is described as the practice to hire a third-party company to take responsibility for special parts for a project according to contract. Outsourcing

refers to the process of consigning transactional activities to experts but initially the tasks could be conducted in-house. The purpose of this practice is to gain optimal efficiency in operation, create capacity for the company to concentrate on its expertise. In some cases, contracting or subcontracting is covered in outsourcing. Offshoring is much more relating to geographical aspect, to Webb (2017), he broached a common practice to ease the term for readers: “In the West, goods are expensive because the staff required to produce and distribute them are costly. In the developing world, by contrast, vast inexpensive labour pools provide an easy bedrock for a low-cost economy. Offshoring takes advantage of these cost differentials by relocating factories from costly countries to the cheaper economies in order to sell the goods back in the West at a hefty discount.”

The table below describes most common categories of outsourcing.

<b>Geography</b>	Inshore Outsourcing
	Offshore Outsourcing
<b>Outsourced activity</b>	BPO – Business Process Outsourcing
	KPO – Knowledge Process Outsourcing
	ITO – Information Technology Outsourcing
	Application Development and Maintenance
	Call centers – Customer Service
	Disaster Recovery
	Finance and Accounting
	HR – Human Resources
	QA – Quality Assurance and Testing
	R&D – Research and Development
	Supply Chain and Logistics
	Telecom and VoIP
<b>Cooperation forms</b>	Transactional Outsourcing
	Co-outsourcing Alliances
	Strategic Partnership

Table 1 Outsourcing category (van Weele 2014, 162)

As depicted in Table 1, it is easy to realise that businesses outsource various segments and functions. These business functions are increasingly more specialised as many companies are established with the missions bringing better services and professional performances for these segments. Smith (1776) proposed the Division of Labour theory, emphasizing the importance of labour force specialization in increasing productivity and facilitating economic progress. The theory demonstrates the breaking down a whole process into many stages then each group of labour can focus solely on one segment of entire production. Furthermore, with the pace of modernization where competitions are much more intense, the thirst for creating advantageous gaps over competitors becomes bigger than ever. Therefore, cutting down administration over non-core activities and paying more attention to core initiatives and competences are popular strategies for most of SMEs. In the other words, SMEs commonly outsource non-core activities to vendors to gain better performances and cutting down time and money spent on infrastructure, operations and labour force.

### **3.2 The nature of Information Technology Outsourcing**

Information Technology Outsourcing (ITO), is the use of service providers providing IT business processes, application services and infrastructure solutions (Statista 2017). As mentioned, outsourcing is having a third-party company deliver and perform one or many activities in an effort of assuring cost efficiency and expertise capacity. The term ITO is familiarised amongst business world nowadays as this is one of the most common practices when a firm considers outsourcing for cost minimization. Organizations usually ponder on outsourcing information technology since this field requires deep expertise while a number of companies are having neither capability nor capacity or both of them to function this proportion of work. It is not impossible to equip knowledge as well as accumulating expertise in IT field and build an IT work station. Yet, considering the cost and effort in building such system from scratch, it may be not a wise choice for firms that are in early stages or their expertise capacities are less relevant to technology environment. In addition to that, according to Deloitte's 2014 Global Outsourcing and Insourcing Survey, the group of authors believe IT

is the typical single largest administrative cost for companies. Laudon and Laudon (2004, 399) also added, in situations where a firm does not want to bind its capital resources in management information systems, it can assign those tasks to be performed by service providers and the process of contracting out of the management of information systems tasks is regarded as IT outsourcing. Hence, IT outsourcing has become a viable business strategy which is widely applied in the modern world.

### **3.3 Information Technology Outsourcing forms**

Information technology outsourcing has four major forms: in-house building, product component outsourcing, process component outsourcing, and software acquisition (XR Software 2005). In-house building means bringing IT talents into company to set up a department to deliver tasks to serve company's need, yet, this is not actually totally outsourcing, just only at early steps. Product component outsourcing is defined as when a company hires a service provider to handle a fraction of a complex work. Process component outsourcing is quite similar to product component outsourcing but instead of producing a part of a complex product, the external group will help outsourced company on one or more stages of production. Software acquisition is the act of outsourcing every activity in relation to software such as programming, testing, designing and maintenance. This practice is considered as total IT outsourcing.

These forms of ITO are practiced via strategies, some outsourcing alternative strategies are suggested as below:



<b>Outsourcing strategy</b>	<b>Description</b>
<b>Subcontracting, limited work assignments</b>	Short-term, over flow work beyond existing capacity is assigned to the subcontractors or vendors. This is just a temporary assignment in much the same way that temporary staffers are hired to fill in for summer vacation assignment of full-time staffers. This strategy is ideal with security issues or when cost prohibits more inclusion from a subcontractor.
<b>Subcontracting, project assignments</b>	Whole IT projects are assigned to subcontractors or vendors. These assignments would entail a complete project where the management of the project would be delegated to the subcontractor and not under the control of the MIS staff of the hiring firm. This strategy is ideal when a company has unique skill or technology requirements too expensive for them to maintain but affordable for contractors to offer their clients.
<b>Total outsource assignment</b>	Where part (i.e., staff, IT, facilities, etc.) or <u>all of the</u> entire MIS function is subcontracted out to a subcontractor or vendor. Here a company may lease all their IT from a subcontractor but run the equipment with their own staff. This strategy is ideal when a company may have a market that requires constant changes in IT or cannot afford to tie up capital in IT

Table 2 Outsourcing alternative strategies (Schniederjans, Hamaker & Schniederjans 2005, 43)

Depending on the need of individual business, different outsourcing strategies of IT functions might be applied. The larger and more complicated the project is, the more personnel will get involved and more time and effort for planning, budgeting, executing and managing will be spent. The activities that necessitate many resources to complete can be upgrading/developing software, transferring whole IT department to a third party or a spin-off company, building/hosting website, disaster recovery, data processing, data back-up, data transferring and data storing. On the other hand, some activities are assorted as temporary and

for short-terms such as updating website user interface which can be completed in maximum of several months. This is where subcontracting and limited work assignment strategies are applied. Besides, some other activities relating to hardware maintenance should not take much time to finish.

There have been many IT outsourcing trends emerging globally in recent years. Regardless of size, enterprises tend to cooperate with more than one service providers, in the other words, multi-outsourcing, when it comes to long-term projects or starting a strategic partnership with a third-party company (Zoria 2019). This approach is favourable as it can help firms gaining business access to the highest levels of service as well as provide opportunity for finalizing the worthiest partnership to carry on in relation to considering company's budget. The second trend is cloud computing which is an astonishing solution for companies with massive and complex database and for some others that have need for accessing data while being off-site.

### **3.4 Process of implementing IT outsourcing**

Dissimilar to other categories of outsourcing, IT outsourcing requires more in-depth specialised knowledge and experience. The result of outsourced tasks will reflect vendor's competence along with their expertise in the field. In some cases, outcomes cannot be relatively close to the expectation as outsourcing logistics service or customer service, it is either this or that, successful or fail. Therefore, to minimise failure and to ensure that the chosen vendor is the most suitable one, following commonly known steps in outsourcing are necessary for the company to succeed. Furthermore, having outsourcing process in mind helps the manager in grasping the idea of the project; visualise, control and tune it toward the expected outcomes. As we all know, the project manager is responsible for the success of a project. He/she is the one who keeps track on everything going on and secures that employees and contractors are performing their best to achieve all objectives that were initially set. Plus, dividing the whole project into stages also supports the company in vendor assessment. Even though the result of the project is the dominant proof showing if the outsourcing firm has real capability or

not, the assessment along the progress can help both sides perceive which parts should have been done better to be applied next time or even in later cooperation with other vendors after the event. van Weele (2014, 125) proposed a three-phased process on typical outsourcing that comprises strategic phase, transition phase and operational phase as illustrated in Figure 1 below.

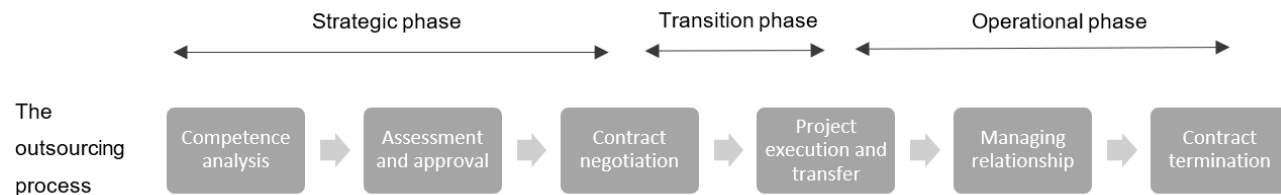


Figure 1 The outsourcing process van Weele (2014, 125)

In the strategic phase, companies need to be able to answer three fundamental questions:

1. What are the objectives of this outsourcing project?
2. What activities will be outsourced?
3. What are the qualification of suppliers that they are look for?

Secondly, when these questions are clarified, companies shall move to the transition phase which includes contract negotiation and project execution and transfer. The critical factor in this phase is the contract itself since in outsourcing, the contract is a declaration of a formal legal relationship between the organization and vendor upon certain deliverables, terms and conditions as well as other legal matters. Revising this phase carefully helps all involved parties in dispute settlements later on. Therefore, it is important to pay extra attention to different aspects of the agreement. The last phase is the operational phase where performance and relationships are constantly supervised and reviewed. In this stage, the manager needs to closely monitor the work process of the project, deviations should be regularly checked and vendor assessment should be recorded to rectify imperfections when it is needed.

### 3.5 IT service provider evaluation

Measuring IT performance is one of the most difficult and complex tasks for a manager who is struggling to opt for the most suitable approach among IT investment alternatives. Assessing the effectiveness of an IT outsourcing provider requires a decent amount of time, especially when measuring IT performance for the first time. While one measures retail sales via growth rate, profit margin and/or return on investment (ROI) rate, which are very visibly numerically measurable and common to businesses, assessing an IT provider is an upper scale when a business considers to having their IT functions outsourced for the first time. Schniederjans et al. (2005, 71) gathered effectiveness indicators systematically which possibly are a good source for a manager to use for evaluating an IT service provider. Although there are many other approaches to access an IT service company, most commonly used criteria are listed as below.

IT effectiveness factor	IT effectiveness criteria	IT effectiveness measure
<b>Operability</b>	Ease of operation of IT	Number of outages, file recoveries, incidents; ease of operation, rated on a ratio scale; mean time to repair
<b>Maintainability</b>	Ease to repair	Mean time/effort to repair/adapt/test; quality of documentation rated on a ratio scale
<b>Flexibility</b>	Ease with which maintenance can be performed	Time to perform maintenance
<b>Testability</b>	Ease with which to test IT	Time it takes to test IT
<b>Reusability</b>	Extent to which IT part can be reused	Number of components reused

<b>Portability</b>	Ease to transfer IT capability to another application	Mean time/effort to transfer IT components
<b>Connectivity</b>	Ease to link one IT capability to another	Number of IT components not adhering to standards as a percent of total
<b>Security</b>	Extent to which IT meets security necessities	Secured data set as a percent of total
<b>Scalability</b>	Ease of expansion	Amount of time required to make improvements

Table 3 Effectiveness measures for IT sourcing (Schniederjans et al. 2005, 71)

Besides factors relating to provider's profession and expertise, there are additional measures relating to vendor's distinctiveness which support a manager while considering between many vendor alternatives.

<b>Objective</b>	<b>IT effectiveness measure</b>
<b>Be an attractive supplier</b>	Overall client/user satisfaction score
<b>Be a good employer</b>	Employee satisfaction score
<b>Be a reliable planner</b>	Performance to budget; percent of project delivered on time, within budget
<b>Be a responsive supplier</b>	Number of hours/days to fix problem or make change
<b>Be quality developer</b>	Number of defects in unit test and system integration by test size
<b>Be competent</b>	Number of year experience by job class
<b>Be a quality operator</b>	Number of outages/defects/incidents

<b>Cultivate innovation</b>	Number of training days per year; percent of total time devoted to training
<b>Be available</b>	Percent of inquiries answered per day
<b>Be informed</b>	Number of informational meetings attended per year
<b>Create new markets</b>	Percent of revenues from new applications, products and/or relationships

Table 4 Additional effectiveness measures for IT sourcing (Schniederjans et al. 2005, 73)

Beside service provider's qualification and characteristics, cost is a major matter affecting the final decision from a manager. IT cost might be very difficult to track but it is not impossible to estimate. In reality, an IT service provider has many clients and each client with specific needs and different complexity levels that they may require, the cost shall vary. However, to be more manageable, IT service cost is classified into two basic categories: costs by activity and costs by resource. Common activities being charged by IT outsourcing company include developing, maintaining, operating, user supporting, administering, etc. Whereas costs by resource cover technology costs, personnel costs, outside service costs, etc.

In addition, the manager needs to take it as a common sense when the cost at what level it is, reflexes how well the IT service provider performs, which could be understood that low service fee equals low quality in performance and it is widely conceived as known as "you get what you pay for". To make sure that the business is not overpaying to the outsourcing firm, certain planning and discussions regarding to tailoring an IT development procedure must be set up beforehand, in where redundant unnecessary IT costs that are expected to be discarded should be clearly presented. An IT advisor/consultant is a person who sits down with the manager of the business to counsel the best pricing plan which ensures both cost efficiency and work load efficiency being at the most optimum level for the client. Parallely with financial matter, both sides are supposed to have agreement upon achievements promised via certain Key Performance

Indicators (KPIs) or business review factors. If IT tasks were unsuccessfully delivered, what are specific solutions or remunerations corresponding to the manner.

There are two common types of billing model that an IT service provider usually uses to charge their clients. They are either billing by activities or billing in accordance to packages. The first type is dependent upon the level of sophistication of client's requirements and the ease of reconstruction as well as integration, the price of implementing the project might fluctuate. Also, the more expertise and experience that the outsourcing company has accumulated over the years, the more expensive their performance may cost. The price is an implicit certain measurement, which expectedly reflexes the quality level of performance and vice versa, the effectiveness of outsourcing services are commonly assumed equivalent to how much it is paid. This issue has been widely-known as an obviousness, sometimes understood as a fact, however, some exemptions might exist. Nevertheless, it is necessary to know the average price range of IT outsourcing services in order to be fully aware of not being overly charged for certain functions outsourced.

It is widely acknowledged that outsourcing software development service is a great way to cut down company's costs. Meanwhile, hiring a team of skilled IT developers working beside other departments obviously ensues several agreements upon their monthly salaries, certain benefits and compensations; not mentioning to an investment on their on-site work stations. In regard to developing inherent software, it is commonly applicable following contracting approach as the work can be conducted under a project form where hourly wage billing is a likelihood. The table below depicts hourly wage rates of developers in several destinations ranked in the top high-quality performance in software developing and engineering. Providing that working hour is on average of 37.5 hours weekly, the developers have at least one-year experience and work in capital area, then, the final quotation from an outsourcing company equals 1.5 times the rate paid for developers.

Country	Developer hourly wage (EUR)	Local hourly cost (EUR)
Philippines	3.34	5.00
Poland	8.66	12.98
Vietnam	8.74	13.11
Romania	9.41	14.12
Estonia	16.42	24.63
Finland	22.81	34.22

Table 5 Average hourly wage of developers in popular outsourcing destinations in 2018 (Payscale.com)

## 4 IN-HOUSE INFORMATION TECHNOLOGY DEPARTMENT

### 4.1 Advantages and drawbacks

IT outsourcing is a method used by a lot of small and medium sized companies since it is cost-effective, provides expertise and gives companies the ability to focus on their core businesses over other distractions. Nonetheless, in some cases, it makes sense for companies to have an IT team of their own.

One of the most fundamental reasons to build an in-house IT department is the availability. Third-party vendors usually provide their services to numerous customers; therefore, it is likely to happen when they cannot immediately respond to your company's problems. Meanwhile, an in-house IT team will be available at the time to resolve emergency issues and prevent the incidents from getting worse. In addition, in-house IT department including specialised employees will be a better fit for such likewise cases since they are already familiar with company's system, coupled with their timely presence, the problem is surely in control quicker in comparison to waiting for the vendor to answer.

Another factor contributing to the benefits of owning an in-house IT team is cost sustainability. Undoubtedly, it will cost more establishing an IT department than having the function outsourced, as it requires a lot of money and huge resources



for facilities, software and labour. However, these costs are predictable and measurable. Unlike ITO, in some circumstances when there are many hidden costs and unnecessary fees, it is more likely that the company will overpay for the services from vendors unless they have consultants and IT experts do the justice.

As everything has its flip side, in-house IT does have its own drawbacks. First of all, as discussed, cost is a big problem for SMEs. Forming an IT department usually is a resort for big companies when they already have sufficient resources to do so in order to gain more controllability in their business operation. Secondly, it could be difficult for the organization when the IT personnel is on sick leaves or holiday leaves while the IT system is having problems. Finally, it could be strenuous and time-consuming in recruiting IT personnel. It is not easy to find suitable employees for forming an IT team, plus, it will take a reasonable amount of resources to provide trainings. Therefore, whether to build a completely new IT department or to risk with ITO, all in all, it is a strategically important decision to make.

#### **4.2 The role of Software developer**

There is no doubt saying that having IT technicians on-site is an extremely strategic advantage on daily basis operation. Any problems, inaccuracies, cyberattacks and other likewise emergencies could happen anytime and the more time waiting for restoring and remedying, the bigger the damage can be. For companies performing their services indirectly via Internet, the interruption of IT system definitely cuts off their operation at certain levels. Furthermore, serious cyberattacks can lead to losing consumer's personal information and/or confidential data which eventually results in losing organization's trustworthiness and even revenue. The availability of on-site IT personnel will increase the likelihood of blocking the effect of such circumstances, or, at least, minimizing the damage as well as shortening and controlling recovery time.

Although software developing is a smaller section within IT in general, there are still potential problems which can surprisingly happen. For example, the current software is no longer supported by the vendor, software has confusing

performance showing incorrect/unexpected data or it can be the most popular problem – coding errors. These occurrences can strongly affect the organization regarding to their operational process. Normally, software problem can create disruption among the organization and their customers/clients which directly affects business continuity and productivity. Before these problems, owning an asset of IT staffers or software developers working alongside with the team absolutely brings many advantages.

First, on-site developers already acknowledge the information technology infrastructure inside business itself. They certainly perceive well functions of individual computers and technologies used in the company as well as the linkage and connection among facilities. Even newly hired developers, they should have been trained about the computer system within the company and they, as working within the company for a certain amount of time after a while, have already familiarised themselves with technologies that company has been using.

By knowing the computing system thoroughly, IT staffers take less time to address what kind of problem it is and where it could possibly come from. This is definitely an ultimate advantage when information technology incident is an inevitable matter. Comparing with an IT service provider, when a random IT related problem happens, the procedure of solving this matter would be done in the way that first, the organization must reach out to the service provider. If the company already has a familiar IT professional to contact to, the job is common and easy to do with just a phone call or a quick e-mail. Yet, if the software is a buy-off/free product/application, maintenance and repairing service might belong to another segment or the vendor does not support such matters, searching for a firm providing these services is compulsory for the organization at the time. Not to mention that searching for the right provider is an effort-and-time-consuming process with steps of market research, reaching out, getting to know, negotiating and settlement of contract. Then, the technician needs time to study company's computer system and allocate the problem that is occurring. Then comes the repairing stage which is complicating to tell, for instance, when the problem is

simple and isolated from the domain, fixing time is expected to be short, whereas, when dealing with larger scaled issues which are much more complex and relating to many other computers, software and technologies, it is inevitable to spend much more time and resources. On account of this, the instant availability of IT technician and software engineer is undeniably an advantage for business in case of errors happen. And when emergencies arise, IT staffers should have already acknowledged set of prioritised steps which must be conducted to save the whole infrastructure in a quick manner. Hence, their presence improves and enhances time efficiency and business continuity.

### **4.3 Recruitment**

Nevertheless, it is not a coincidence that people believe having IT functions outsourced is a wise and decisive option, as the fact that hiring IT employees working on-side has several downsides and one of those is time-consuming and effortful while business operation does not require much IT expertise or constant use. Firstly, it starts with the recruiting process with identifying company's need - a prerequisite that includes goals and vision which will sooner be realised after successfully attaining software experts. In other words, that is the job of finding someone who can fulfil organization's expectations, smoothen operation and ease current difficulties in the segment of software developing. After that, details of tasks are formed in job description in order to announce to potential candidates. The more specific and to-the-point the description can be, the higher is the possibility that the candidate's traits and abilities reach to the company's expectation. Next step is setting up a recruitment plan, in where smaller steps are taken, for example, posting position offer in several channels which have much traffic and interaction with potential candidates. They are social media platforms, employment-related search platforms, company's website or having it printed in local newspaper. Then comes reviewing applications process, shortlisting potential candidates, inviting them to interview, conducting interviews and selecting the right person to hire. In accordingly, there are many steps to go through to hire a perfect fit employee and that certainly involves much time and effort.

From a study of Chamberlain (2015), the average time-to-hire for all types of jobs has been increasing by 80% since 2010 and time consumed to hire an employee working in the field of information technology engineering is considerably longer than average. Regarding to his work, the more complex and customised the nature of the job is, the lengthier time it takes and not surprisingly that tech jobs require weeks to find the correct talent. Average time to process entire recruitment which was calculated in the US, for instance, is 40.8 days for the position of software development engineer. Nowadays, with the development of applied technology on human resource management, a lot of software applications were born to support recruitment process. Many screening methods are used to narrow down the list of potential candidates. Before conducting interviews, background checks are very common and popularly applied. In the period between the year 2010 and 2014, the method has been in use increasingly in five years from 25% to 42%. Aside from that, skills tests (from 16% to 23%) and personality tests (from 12% to 18%) are also fundamental, which partially support in making right judgements of whether to bring candidates to the next procedure (Chamberlain 2015). Therefore, the more steps and checks it takes, the more likely that company can find the right talent and this obviously signifies much time to spend.

Besides taking a lot of time, after the recruitment process, training a candidate is an arduous job in the beginning in order to get him/her familiar with current used software as it could be a niche or under customization; computing infrastructure; and cyber security matter in the company. If the organization already have their own technology, that candidate definitely needs some time to absorb and study before starting coding. In correlation with hiring a developer for a company specializing in IT services, in where converging a pool of tech talents diversifying in many technology platforms, the person got hired for that company must be an expert and has real capability, coupled with years of experience to compensate enough, or else, the company will possibly have to take further steps in equipping more knowledge for the person.

Being an official employee, software developing personnel will be paid with fix salary and sometimes not in relation with work intensity. Their work will be varied in accordance with company's need following upon every stage. Working as software developer does not follow similar daily basis tasks, instead, it is more likely project works, developing day by day, until the project is completed. On the beginning, the job is quite intricate as he/she must plan resources to start up a project. The table below indicates tasks that a software developer is expected to perform.

<b>Software developing category</b>	<b>Developer's responsibility</b>
Creating and developing new software	<ul style="list-style-type: none"> <li>• Researching user's requirements</li> <li>• Designing and writing new software</li> <li>• Testing</li> </ul>
Evaluating new and existing software systems	<ul style="list-style-type: none"> <li>• Designing testing plans for newly developed software</li> <li>• Performing QA testing on software systems</li> <li>• Finding fault in software system</li> <li>• Correcting fault/error in software systems</li> </ul>
Improving existing software systems	<ul style="list-style-type: none"> <li>• Analyzing users' requirements and suggestions</li> <li>• Creating solutions for existing issues</li> <li>• Implementing these solutions</li> </ul>
Performing maintenance to existing systems by monitoring and correcting defects. Writing code for new software and updates	<ul style="list-style-type: none"> <li>• Running code to test efficiency</li> <li>• Rewriting code to correct errors</li> <li>• Running test again until code is error free</li> </ul>
Working in tandem with other staff members such as project managers, graphic designers, other developers, database administrators and sale and marketing employees	<ul style="list-style-type: none"> <li>• Consulting with clients/managers on the progress of developing software to check possible improvements, suggestions or requirements</li> </ul>

Other tasks	<ul style="list-style-type: none"> <li>• Writing operational manuals and system specifications</li> <li>• Writing report on project progress</li> </ul>
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Table 6 Software developer's primary responsibilities (Neuvoo.ca 2019)

According to Table 6, preliminary tasks working as a software developer in a full-time basis might be over necessary towards firms which are not in need of such much service. Sometimes problem is just a coding error or company's arising need for integrating a new function into the current software which only requires the presence of IT experts in a short run. Plus, it is because the company's specification does not lie in tech field and their operation is mainly without involving much information technology, hiring a full-time developer is obviously a less wise option. Even though the company desires less performance from the personnel, he/she should be entitled to the right of being paid monthly, still, there is basically nothing to work on at the time. Except for benefit agreements of other kind, fixed salary for employee is regarded as investment in doing business and undeniably a part of company's resource. Now, it is spent in monthly basis, consequently, there is a great chance for the company to reset-up their strategy to have the activity outsourced because hiring developer is costly.

## 5 PROPOSED MODELS FOR DECISION MAKING

Emma Matratze UK, an e-commerce firm, is facing a considerable challenge of implementing changes to their software platform. Whether the company chooses producing the service by themselves (*internal exchange*) by hiring in-house IT personnel or outsourcing the production (*external exchange*) by having a vendor taking care of the job, making such decision is not simply accessible. A company usually picks outsourcing approach for services namely, accounting and facilities maintenance because there are countless third-party professional vendors in these fields offering reasonable service price. The organization would rather have the functions outsourced than buy facilities and hire employees to do the job because they only need such services in a short period of time. Furthermore, they can focus on their business initiatives and strengths rather than wasting time

and resources on unnecessary and less important practices. However, in some cases, it may be wise to introduce that service production in-house, especially when that service is very important to the company. In the purpose of helping to make decision, Zeithaml, Bitner & Gremler (2009, 395) suggested a model for internal/external exchange decision making process including the following factors: *expertise capacity*, *resource capacity*, *time capacity*, *economic rewards*, *psychic rewards*, *trust and control*.

Expertise capacity
Resource capacity
Time capacity
Economic rewards
Psychic rewards
Trust and Control

Table 7 Internal/external exchange decision making factors (Zeithaml et al. 2009, 395)

First thing first, before starting the self-service establishment, a firm should have in their possession employees with specialised skills and knowledge related to the service. *Expertise* is not necessarily a must-to-have component, on the flip side, it increases the probability in succeeding in self-service production. Secondly, an organization needs to consider their *resources* (human, finance, etc.) before making this decision. Following to that, *time* is a pivotal factor. If a company needs greatly successful result in a short period of time, may be building a production team from scratch is not the best choice. An organization should also take a look into *economic* situation (i.e. exchange rate and legal issues) which will generate considerably impact on the decision. *Psychic rewards* are noneconomic factors that may affect the company in the way of satisfaction and happiness. *Trust* also plays a critical role in this scenario. The organization needs to define the level of their confidentiality before deciding either to start an in-house team or to have a vendor take over. Last but not least, this decision will be based on the level of *control* that companies would like to have over the functions.

## 5.1 Outsourcing Matrix

Van Weele (2014, 165) proposed an outsourcing matrix which will be a useful guide to be able to orient the firm to the best decision about this outsourcing vs in-house production dilemma. This matrix should help Emma Matratze answer the question: Which will be a more appropriate option for them, IT Outsource or in-house IT?

Level of competitiveness relative to suppliers	High	<b>Maintain/ invest</b> (opportunistically)  Competencies are not strategic but provide important advantages; keep in-house as long these advantages are (integrally) real	<b>In-house/ invest</b>  Competencies are strategic and world-class, focus on investments in technology and people; maximize scale and stay on leading edge
	Low	<b>Outsource</b>  Competencies have no competitive advantage	<b>Collaborate/ maintain control</b>  Competencies are strategic but insufficient to compete effectively; explore alternatives such as partnership, alliance, joint-venture, licensing, etc.
		Low (non-core)	High (core)
		Strategic importance of competence	

Figure 2 The outsourcing matrix (van Weele 2014, 165)

Van Weele believes that the strategic importance and the level of competitiveness are key drivers helping an organization figure out which strategy they should follow when contemplating on outsourcing. The level of competitiveness refers to the intensity of rivalry in a particular industry where organizations put pressure on one another to gain potential benefits from competitors namely market share (Wilkinson 2013). So, the competitiveness in an industry is high when the industry carries several features such as many competitors, retard growth, obvious brand loyalty, equally proportioned market share, high fixed cost and high exit barriers. The other factor that the author put in relation with competitiveness is strategic importance which means long-term potentiality and key impact of a competence or a factor in a business, a plan or an event.



Van Weele (2014, 165) explains when the competence is vital to a business, which promises potential growth and plays a decisive role, the firm should invest resources to develop it. However, when the market share that the firm has is low and their production capacity is still limited, the strategy to be applied here is establishing partnership, alliance or joint-venture to intensively build up a strong foundation first. Until when the business model or some product that the organization has been cultivating gains tremendous popularity and enough strength, the organization with already built groundwork, can start investing resources to utilise technology to create competitive advantages in the environment in where rivalry is increasing fiercely.

In contradiction, when the competence is not the core business of an organization, they do not tend to prioritise it as an obviousness. There are two scenarios when the organization operates the non-core functions and it depends very much on the business resources. In other words, it is whether the organization has sufficient capability and support to keep the functions in-house. When they do not have enough resource to maintain it on-site, outsourcing is a viable strategy which is considerably the best solution for the organization at present. Whereas, the organization has enough support to sponsor the non-core function, it is suitable for them to maintain it in-house as the function provides certain advantages for the organization.

## **5.2 Multi-factor scoring method (MFSM)**

This segment depicts one of the most used decision-making tools: Multi-factor scoring method. During organizational selection stage, the decision environment must comprise some constraining factors causing the complexity in deciding process (Schniederjans et al. 2005, 224). Multi-factor scoring method is designed to make those limiting elements and considerations clearer as well as incorporate them into a more structured and rational order which results in generating the most precise decision. This tool is considered as simple to conduct and easy to access (Schniederjans et al. 2005, 225). It can be done with basic mathematical formulas which greatly creates the differences among choices. Presenting such

benchmarking tool potentially supports Emma Matratze in decision making process later on especially in choosing which vendors it should partner with.

Decisions are made basing on criteria which help firms distinguish and single out the best choice among a variety of alternatives. Generally speaking, any settlement on a choice has fundamental foundation depending on individuals, circumstances, budgets and interests to name a few. For IT decision making, listing out a number of critical factors surely supports the process. For example, to purchase a software platform, there are many differing factors that a consumer needs to consider such as functionality and integration. First few criteria can be high capacity of data storage; time of querying, retrieving and reporting data must be expectedly short; user friendly; back up memory; warranty and maintenance support availability; compatibility over current software; adaptability with current system and new function integration. Those general requirements will help the consumer to narrow down to some providers' brand names which are renowned for those characteristics. He/she needs to prioritise factors most required in the new software that he/she is about to purchase by putting them in order from most prioritised to the least. These indicators matter because they support giving precise foundations for decision formation process.

Factor scaling is a compulsory matter at the next stage. Consideration process is getting more complex when the group of criteria contain different features and different approaches to measure. Whilst we have the unit of currency to estimate and consider the purchasing price, factor of compatibility between current software and up-coming bought one is measured by subjective score. So, to make it clearer to evaluate, all factors must be converted into a unit of measurement to truly weight the alternatives. The methodology is no more than a specific rating system scaling factors with scores which is commonly used in selection-based decision making and it is called *multi-factor scoring methods* (MFSM's).

Renkema and Berghout (1997) described *multi-factor scoring methods* (MFSM's) as a collection of quantitative methodologies illustrating the measurement

between alternatives according to critical factors, scores (numerical fashion) will be given for each alternative on each factor and eventually, accumulated summation will orient the chooser to a proper option by the highest rate. In addition, rating scale can be made up no matter from 1 for poorest rating to 10 for the most satisfying rating or from 1 to 100, yet all factors must be evaluated under one same scale. All alternatives must be mutually exclusive, which means the person chose one, could never choose another at that point. Similarly, alternatives for Emma Matratze are either hiring IT specialists to work in-house or having the work outsourced off the business. However, hybrid method situations might present themselves when both alternatives balance with pros and cons, from there, one of the alternatives might be implemented first as a project on early period and later the whole software maintenance service could be taken care of from an outsourcing firm. Nonetheless, any alternatives or any final decisions should rely on thorough research, measurement and careful consideration and *multi-factor scoring methods* (MFSM's) is a very useful and accessible tool to start purging less prioritised choices. Below the author illustrates an example of comparing alternatives based on hypothetical factors, given the fact that all factors weigh the same and the scale would be from 1 to 20.

Critical factors	Alternative A	Alternative B
Cost	12	17
Flexibility	16	14
Security	15	14
Scalability	13	12
Summary	56	57

Table 8 Multi-factor scoring method table for unweighted factors

There are two commonly known types of MFSM where critical factors are either weighted or unweighted. Table 8 is an example of using unweighted factors for choice making in which no priority presents between criteria. From the table, it is easy to notice that alternative B gains higher point which indicates that B is the better option. On the other hand, the other type of MFSM is with weighted factors

which means each factor has a discrete level of importance in yielding decisions. This type of MFSM is more likely to be employed since it is able to illustrate and clarify exact expected results, in which criteria are ranked in accordance with priority or necessity depending on the purchaser's will. Every criterion will be denoted for a certain point or it can be expressed as percentages (decimals) of importance in the whole decision and the sum up must be 100% (1.0). The points given for alternatives are multiplied with the point set for the criterion to finalise the exact rate for each alternative in respect of the mentioned factor. We can develop the example in table 8 by adding percentages of proportioned importance and do the mathematical process. Percentages given below are hypothetical for a case which a company has strong financial advantage that the company can accept any alternatives regardless of cost. However, the key performance indicators to the company are security and scalability because the company has many branches. They prefer information is treated with secured protection and if any leakages happened, the process of "extinguishing" must be simple and quick and similarly, database should be safe in storage. They set the percentages for the criteria in the order as table 8 as 0.1, 0.2, 0.4 and 0.3 and a table illustrating result derived from weighted factors is as below.

Critical factors		Alternative A	Alternative B
Cost	0.1	12	17
Flexibility	0.2	16	14
Security	0.4	15	14
Scalability	0.3	13	12
Summary	1.0		

Table 9 Multi-factor scoring method table for weighted factors

Critical factors		Alternative A	Alternative B
Cost	0.1	$12 \times 0.1 = 1.2$	$17 \times 0.1 = 1.7$
Flexibility	0.2	$16 \times 0.2 = 3.2$	$14 \times 0.2 = 2.8$
Security	0.4	$15 \times 0.4 = 6.0$	$14 \times 0.4 = 5.6$
Scalability	0.3	$13 \times 0.3 = 3.9$	$12 \times 0.3 = 3.6$
Summary	1.0	14.3	13.7

Table 10 Multi-factor scoring method table for weighted factors (mathematic process and result)

The outcome from table 10 has given a clear shift of determination which was initially from alternative B to alternative A. Indeed, comparing level of importance and prioritizing matters among necessary factors have taken a great part in making more accurate and satisfactory decision, which matches company's business condition at that point. We all know that companies adapt in accordance with their stages, some companies have enough potentials and resources to endure any shifts and afford with integration into brand newly on-going high-end technologies. Yet, to some firms, any decisions made, they would have undergone through extremely careful deliberation and contemplation. Therefore, weighting critical factors as shown in Table 10 is a wiser approach for any decision makers who know well what are prioritised now, what they have to compromise for short run and what actually matters. The criteria that are considered as driven factors and gain outstanding percentages, will orient manager to the closet solution that meets company's current requirements and expectations. Although the alternative they opt for today might not be the best, that could be the utterly right solution at the time which satisfies current needs and does not harm company's resources, especially in regard of finance.

Both weighted and unweighted multi-factor scoring methods are very simple to understand and easy to apply in analysing alternatives for choosing the right solution in the end. Depending on how big the problem situation is and how complex the selection processes are, the utilisation of each method can vary. After all, MFSM's in general are ones of many approaches, the results obtained after using this tool cannot solely be the final solution, instead, the outcomes should only be a reference source for the decision's formative stage.

### 5.3 Outsourcing considerations

Besides applying MFSM in forming decision, there are some general considerations regarding to core competences as well as actual resources to be reflected beforehand in order to reassure the direction that the organization is heading to. Discernibly, having IT functions outsourced or purchasing, using then maintaining a new software changes business current operation on almost every aspect. Those changes expedite and promote operations within the business and at the same time, it costs the business money for the technology, time to accustom to the change, and human resources to manage and sustain this transformation.

The organization is likely to desire favourable factors that accompany with its missions and practically improve their business situation. They might want more innovative technology, reliable IT infrastructure and being ranked excellent in the field they are focusing (Kendrick 2009, 50). Hence, to decide over an outsourcing issue, the board members should raise some critical questions such as:

1. How does outsourcing the functions suit with company's business objectives?
2. Is it now the time to do this transformation in accordance with the business plan which was initially anticipated?
3. Regarding to company's budget on the development, how much differences are the alternatives?
4. What are managerial and operational implications yielded from the decision? How are human resources going to be allocated to make the project work?
5. What are expected benefits from the project? Are they real/feasible?

When the decision of going to outsourcing IT functions is strategically possible, it is time to address other operational level concerns that are how is the project implemented and how to measure the performance. While previous considerations are at board level, this level requires the presence of experts and specialists namely project manager and IT manager. If the organization does not have these positions or the personnel there is not really an expert, the help from

an IT consultant from a third party is very helpful. The questions that the organization needs to answer with the help of IT experts are:

1. What terms and provisions are required to protect the company's data?
2. What are risks of confidentiality that the company has to compromise while implementing the project and after finishing the project?
3. How to measure vendor's performance?
4. How to manage the outsourced software and system and how to exploit the maximum benefits?
5. What are potential conflicts arisen from management functions?

Every organization has different concerns and visions on outsourcing IT practices, however, there are certain typical matters that need to be taken into consideration to finalise decision. Sometimes, a particular strategical issue and a functional concern are in opposite positions, in which the place the company is forwarding to goes against to the organization's real capability and current resource. Hence, it is practical and wise to do the research carefully before calling for any approaches.

Particularly to IT consideration, advanced IT nowadays undeniably plays a pivotal role towards enterprises' development; that in any industries, the advantage of owning high-end technology and reliable IT infrastructure is a real momentum for the development of the whole organization, bolstering productivity and quality service. There are smaller matters that boarding members of an organization can think of and debate when scrutinizing either outsourcing IT projects or extending an IT function on-site. They are strategy, technology, compliance, operations and finance (Kendrick 2009, 50).

The motivation of improving the competitiveness of an organization is very easy to understand that investing in IT is a strategy boosting their business operations and quality service. In perspective of **strategy**, the organization needs to determine which are their core competences. Then they need to answer whether their business activities involve in using information technology and what level of dependence on IT that their activities are at? Does having an IT function outsourced make large improvements on how the business operates? Moreover,

they need to research on whether the organization will be more responsive to their customers if they do IT outsourcing or if they extend the function available in-house. Furthermore, the managers at board level need to consider which IT outsourcing approach is viable and appropriate to business goals and resource conditions.

Additionally, when it comes to **technology** topic, everyone desires the most cutting-edge pieces of machinery or the most efficient software that not only facilitate business operation but also satisfy convenience of use. However, the resource is limited, choosing certain technologies that can fuel, smoothen the company's system enough and support satisfactorily adequate functions for the organization is already a success. The prerequisite for opting a software or an IT solution which should always be remembered is as long as it meets fundamental needs to run business operation. The technology chosen should not generate any reduction in effectiveness of company's IT performance, service quality and increase in execution time for one same task.

Legal issues and **compliance** provisions are very important for any organizations to supervise. Those factors are not just only the legal framework that regulates how IT functions are carried out but also is a minimum shield that safeguards organization's intellectual property. Many companies regardless of size consider legal framework as irritating matter that they force themselves to comply with, which sounds roughly unpleasant. This partially results from media and publications about confidentiality disclosure and loose data security which have caused system breakdowns, reputation damages and financial loss. But when looking straight at the problem, compliance requirements help both parties when they are going to implement an outsourcing project. From the organization perspective, when having a vendor take over certain functions, which means a large part of internal database will be handled by an outsider, hence, it is essential to reinforce a legitimate commitment about processing client's data. From vendor's side, the legal agreement is a working contract to assure if they satisfactorily complete the project to client's expectation, the remunerations are legally in force to be paid. Provisions that govern outsourcing IT at basic level



are: product liability, misleading advertisement, conformance with quality standards, environmental regulation, and health and safety regulation (Kendrick 2009, 57)

As mentioned earlier, **operational** concerns are ones of the most important matters that should be firstly discussed when the intention of outsourcing IT functions is just kindled. Functional matters here are business systems and infrastructure which are tools for executing business plans, empowering production and quality service to meet customer's demand on both niche and quantity. Plus, it also has ability to bring certain benefits back for the organization and their stakeholders. Operational functions here also relate to human resources which should be appropriately allocated to optimise the IT outsourcing plan. In case the IT functions are outsourced excluding human element, or the organization is going to outsource the whole department, including human resources, anticipations and preparations on how the project is intended to be done is very crucial. Plus, other issues associating with fixed-term employees only for the period that the project endures, compensations must be agreed from the beginning, and if any other later positions are provided, the changes in the initial agreements should be taken care of seriously. Any employment agreements comprise provisions of employment protections which connect with relationship management of the organization.

Last but not least, **financial** matters, which are inevitable in any projects, bear no exception in IT outsourcing. All other strategic, operational, compliance and technology considerations are in relation with financial concerns. The organization needs to have comprehensive access to all detailed financial information to be able to make the expenditure plan rationally. Some suggestions for financial issues to scrutinise are: total cost of the project, consultancy services before and after project, legal services before and after project, licenses, cost of recruiting extra personnel for managing contract and Service Level Agreement (SLA) and some hidden costs that were not anticipated from the beginning. SLA is understood as a fundamental and integral section in any outsourcing contracts, including parameters determining how tasks are performed and evaluated. This is

also a set of service quality dimensions that consists of standards, objectives, tolerances, penalties and rewards. Every organization has their own way to spend their money their projects, some overheads, salary and service fees can be calculated in advance, yet when the project is put in to action, unexpected costs might rise.

## **6 INTERVIEW**

### **6.1 Interview guidelines**

The determination of this research is to find out if Emma Matratze's current software compatible and supportive along with company's needs. As one of the most fastest growing start-ups in Europe, Emma is progressively acquiring more customers. Therefore, it raises the question: should the software where customer's information and transactions as well as internal operational activity records are stored, be upgraded to a certain condition? The author decided to interview company's staffers who use the software in a daily basis and work closely with customers to have the insights of its user friendliness, efficiency in solving customer's problem and specific integration suggestions.

The research sample is a combination among staffers holding different positions in Emma Matratze. There are people working since the cracking dawn of Emma, people working as long-term employees, interns and an external IT personnel. The reason behind this selection is to show if the software problems are repetitive and if the experience using software vary between new staffers and old staffers. The sample also contains manager position and employee position in order to show if there are any dissimilarities in their perspectives towards the software. The people in the sample are randomly chosen serving the purpose of avoiding systematicity at the experiment in case of differences exist. Plus, this approach will produce outcomes that are not deliberately oriented, instead, they will be reviewed and assessed objectively and impartially. From there, building a functional strategy based on the reality of encountered difficulties at the present is more feasible.

As mentioned in the previous segment, questions which were asked to clarify user experience using the software, how well it functions to deal with ongoing inquiries and at last are recommendations. This part will be presented with interviews one by one, and from there, common perspectives and observation as well as shared struggles will be revealed.

Besides, another interview was made with an IT personnel who has objective perspectives about the IT outsourcing industry in general as well as personal insights about issues that he and his team have been working on so far. Through this, the author expects some sharing relating to his job, achievements and difficulties behind his team's job.

All the interviews were performed within the period between December 2018 and January 2019 via three different forms: e-mail exchange, Skype call and face-to-face meeting. While data gathered from e-mail is available in text, which will be included in the appendix of this paper; Skype conversations are recorded as audio files and information during the in-person interview is originally noted down. In order to effectively analyse this data, keywords are mainly focused as well as broken down into categories and their appearance frequency are carefully measured. On the other hand, emboldening important quotes while interpreting the interviews supports the process of converting data into thematic coding table in later section.

## 6.2 Interviewee A:

The author had the opportunity to work with A during her internship. This person was working as a customer service agent who performed tasks mostly relating to managing customer's buying journey and taking care of updating data to the system. Accordingly, he **used the software daily** to keep up with customer's inquiries. When he was asked about his experience using the software, he claimed he did not have much issues with it though he thought it was a **complex platform**. He described that he mostly used the software to **look up customer's information**. He said it was a good system, yet, he and the team did have

**separate sheets to record other information**, therefore keeping other platforms open was necessary to check information quickly, especially there was a **customer waiting** on the other end of the phone. A informed after the author had finished her internship, he found out that **other teams have been integrating** several functions into the software, it is just the UK team that did differently. The interviewee believed that the current software was almost **obsolete** and there was at least a more intuitive software available to replace the current one, yet, most of the complex software platforms were not aesthetically pleasing and user friendly.

About the role of the software in supporting a customer service person in dealing customer's queries, the interviewee, on the other hand, was quite comfortable overall using the platform to handle customer's problem. To him, customer's satisfaction lied in the way you try your best to solve the trouble, which meant you would do everything in your power to help them.

In regard to have software developers work besides the team, the interviewee expressed that **having developer** would be nice, but it should happen **in the future**, Emma can **outsource** the activity elsewhere because the company is **still a start-up**, resources are supposed to be wisely used and spent. Lastly, he suggested making the software easy to use and the company should have trained new staffers about the software properly and thoroughly.

### 6.3 Interviewee B:

The person who was interviewed started working for Emma Matratze since the early days when the company was just newly established. She has longer time experience as well as witnesses more changes that had happened within the firm. This also means she had been using the software in quite a long time and should have faced drawbacks or errors when using the software. Her job is to work as a customer service agent and internal logistic processes manager who directly works in tandem with financial department and UK partners to perform exchanges, reimbursements and other after-sales tasks.

When mentioning about personal experience using the program, the interviewee evaluated it as a decent platform which functioned decently and helped her deliver tasks. However, she recalled a couple of problems that were **lacking user-friendliness and the tardiness** when it got updated, these had led to long latency. In spite of that, above all, she approved the software was a useful database storage together with another tasks, she was able to link many necessary things together to solve customer's inquiries. Opening the software alongside with other **spreadsheets** was not a bothersome thing to her, but she would see as an advantage when the software itself could have been integrated with more data and functions.

In the manner of customer's fulfilment, she fathomed that responsiveness was the most important key to please customers at first besides how well the customer service representative handled customer's situation. Nowadays, **Emma increasingly accessed** deeper to the market, the number of purchasers grew restlessly over years and customer relation team got busier than ever with phone calls, e-mails, messages from all over social media platforms. Hence, the activeness and attentiveness took part in bringing satisfaction for consumers. In order to meet the requirement, the **technology platform must be fast and effective** enough to be able to cope with all inquiries from customers, avoiding the scenario dealing one situation for too long, resulting in missing other calls and incapability to check other messages. By working closely with customer, the interviewee derived that **customers greatly appreciated rapidity and efficiency**.

Finally, the employee **recommended** to upgrade the e-commerce software platform so it had the capability to load customer information within expectedly shorter time, functions were run smoothly and user interface must be friendly and pleasant to use. She expressed neutral perspective towards having on-side software developer as she said it was good for the company to have them working shoulder by shoulder to create better service for Emma's customer as well as outsourcing software developing activity was not a bad idea to start with.

#### 6.4 Interviewee C:

This interviewee holds a higher position in the team, working behind customer service line and taking responsibility as supervisor as well as manager in production and sales and marketing. The person is working closely with the team and in the position of making important decisions for the company.

The interviewee provided deeper information regarding to the software. He told the platform was a free **e-commerce-based platform** and it was the **first generation**, so certainly its **functions and interface were less preeminent** than later versions. He added since Emma was Bettzeit Group's subsidiary, any IT problems in relation to company and subsidiaries' websites along with computing infrastructure, general IT team, in where, there were three back-end and three front-end developers working full-time, will take care of them. To personal experience, he honestly thought there were many more advanced and cutting-edge software available in the market and many other SMEs were using better technology solutions, he was afraid of the current used software **getting obsolete** and no longer supports available for old software. When he was asked about problems and difficulties he had faced while using the software, he said mostly no, he rated the software as a nice one which functioned normally and sufficiently. On the other hand, he was very open to many options of making changes to this software platform, either it could be **outsourced domestically, offshore outsourced**, or the other resort could possibly **be replacing current software** with a totally different brand-new one to **attract IT talents** to work in-house. Since the software was not used popularly, just a decent segment in e-commerce industry, there were **clearly less developers who specialised in developing this software**. Instead, most software developers were trained to build and develop internal software for individual businesses or they followed the main streams for other highly advanced and most favourable ERP platforms with better features of restoring, retrieving, tracing, adjusting and backing-up information such as SAP, Oracle and IBM's software.

He expected after whichever solution was applied, it brought to business reliability, low risks, cost effectiveness, solutions that could help fulfilling the company's need with a growth and optimization of processes. He confirmed if there was a necessity of implementing hybrid solution, he would be happy to ponder on it as long as the approach enhanced company's growth.

## 6.5 Interviewee D:

The interviewee works in the IT industry and he is not employed by Emma Matratze. The author got to know him thanks to a close friend of her who referred. The interview with him was very quick, yet very interesting, which brought a closer insight on a service provider's jobs. The interview is relatively subjective through a perspective from a person who earned three-year professional experience in the company, excluding his internships and freelance work. He started his career as a software developer having experience in migrating and extending software functions in a company that provides software services. Currently, he holds the position as project manager in a team of six which dedicates on bringing IT developing service for many clients.

He shared that having IT functions outsourced was very popular among small and medium sized companies, especially firms that sold their products and services through websites and application sites. Big companies also do outsourcing but normally they already had IT departments so most of his team's job were **consulting** how to use the purchased software properly, **integrating data, writing codes for new functions, investigating and debugging** when errors occurred, etc. Besides, other IT functions that D's team received requests from clients were expanding tracking delivery function associated with retrieved results from courier's updates, adding payment methods and categorizing data for easy access.

When talking about D and his team's achievements, he found it was hard to recall specifically since every project had different expectations and missions to be accomplished. In addition to meeting the particular requirements, his team helped clients in **decreasing execution time, speeding up sales channels,**

**redesigning** and **personalizing customer journey** experience, **standardise cross-device** experience, **helping webpages responsive** in all browsers, enhancing product conversions and customer retention by **relevant customization**, etc. When he was asked about recent advanced technology, he shared that the technologies, software and numerous kinds of open-sourced platforms firms used nowadays abounded, to the newest to the fairly old. He expressed **depending on the specific needs** and requirements that the organization opted for certain software and technology. It was **not necessary** to **run after the best technology solutions**, just used the ones that supported business operation effectively, playing a tool of attracting more and more customers and parallely fitting organization's budgets.

He had a piece of advice to companies having intention to develop IT functions by outsourcing strategy that: they should **consult IT experts**, try to approach as many vendors as possible, share their problems without disclosing confidentiality if they feel unsafe. Do not hesitate to discuss, spend time to **visualise the expected outcomes** after the projects that they were about to destine to. As working in a firm providing such service, he said pre-project period was very important for both parties as vendor could understand what clients wanted specifically and what improvements and deliverables that the projects could bring for the clients.

## 6.6 Interview analysis

Clearly noticeable that certain keywords are emboldened from the presentation of the interview segment above. Derived from individual's perspectives, the author gathered outstanding and repeated opinions and experiences in respect of Emma Matratze UK's current software as the table below.

<b>Opinion and experience about software platform (SP) that Emma Matratze is using</b>	<b>From interviewee(s)</b>
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SP is used in daily basis; it enables looking up for customer's information sufficiently	A, B, C
Using other sheets to record add-on information takes employees longer time for searching that causes less responsiveness and attentiveness while serving customers	A, B
SP is a complex platform, lacks user-friendliness and has old interface	A, B, C
SP is slow sometimes which affects to the customer's satisfaction	A, B, D
SP could have been integrated more functions to shorten time used for finding information and solutions	A, B, C, D
SP is considered as a fairly outdated program; its functions and interface are less preeminent and it needs to be upgraded or replaced	A, B, C
In general, SP functions normally and sufficiently, providing enough support to handle customers' problems	B, C
Since Emma is an emerging start-up, resources are still limited, the company should focus on core business rather than building in-house IT team	A, B
Having developer working by side is useful	B, C
Emma can select outsourcing as a kickoff strategy	A, B, C
Customers greatly appreciated rapidity and efficiency	A, B, C, D
Less developers who specialised in developing this software	C

Table 11 Interview data retrieval using thematic coding

From the table above, it is possible to conclude that the software platform that Emma Matratze is using has many functional deficiencies as well as less friendliness for users. The first issue lies at the beginning stage when some employees were not trained carefully about the software comprising its functionality and how the system works briefly and succinctly. Expressly, the step has been overlooked. This engenders bewilderments for new staffers especially for new trainees who might never have used the software or such program before. In many companies, pre-employment trainings are neglected or

underestimated with an excuse of learning by doing. This approach is not totally wrong when it is obvious that practicing is a way of mastering at something, yet, the employees could have started better if they received the sufficient software guidance and supervision on early days.

As the interviewee C has shared, user's friendliness of the SP is considered less preeminent than other software available in the market due to the fact that the company is still using the first generation since day one. Combined with less initial training, using an old program is quite a bit of challenge for new staff. Furthermore, using software that is not updated ensues many problems, not only for users. Firstly, the organization will miss out on latest functionalities that new software or updated software has to offer. The new environment of popularly used versions is likely compatible to many other software and hardware systems. When the organization wants to get some extensions for the program, it is easier for themselves to find a vendor that provides the service for a widely used platform rather than the old ones.

Besides, using an old piece of software can cost the organization more since it would be arduous for them to find the right vendor who provides supportive yet fitting service for the software. Truly conceivable that is when talking about an example of restoring a weakened and damaged old painting. Undoubtedly, it would be expensive to do so, because it requires a longer process to search for applicable approaches, finding right materials for washing impurities and using the matching colours to repaint some strokes and areas without ruining its original beauty.

Thirdly, using obsolete SP might cause issues in respect of security. Out-of-date technology has the vulnerabilities of security which could be a major risk for the organization. Their data could be illegally accessed due to lacking security patches from the server and operating system. Since the manufacturer no longer supports the software system, in other words, the system is reaching to the end of service, those vulnerabilities are not patched and consequently, this such of an event would result in data exposure and business disruptions (Most, B. 2018).

All interviewees agreed to the fact that the SP currently used is okay to work with. This notion is commonly and widely accepted in many enterprises and many people are adamant about not upgrading because there has never been any major problems with the software yet. Combined with an excuse which is employees are already familiar with using it as it is, so, people are more prone to neglect this matter. This misconception will cost the organization in the long run when it comes to some surprising problems later. As many other operating systems, utilities and applications, the software is created for the optimal use at the time. It should be checked and get updated in a regular basis to assure lower potential risks to occur. Hence, even though the software platform functions normally and sufficiently, provides enough support to handle customers' inquiries, as interviewees stated, upgrading software is crucial for Emma Matratze to safeguard their IT system and make enhancements for user convenience and effectiveness.

As analysed before in the theoretical segment, that having in-house IT function provides many benefits for the organization, however, the move is not likely to be practical for Emma at the moment. The introduction clearly shows that Emma Matratze's core competence is business development, boosting sales growth, developing and improving product quality to become a highly favourable sleeping brand in the UK, meanwhile the software is no more than a tool for supporting sales and customer service. In addition, Emma is considered as a young start-up owning a powerful and soaring developing momentum with a series of successes in recent years. Plus, gaining popularity equals having more customers to handle with, hence, the force of being more effective, productive and precise is getting bigger and bigger. As expressed that the functions of the SP are sufficient enough to solve customers' queries, the gist of the big picture here is how to improve user interface, how to enhance service performance and capacity, how to improve the software to be more multifunctional. These matters should be focused in relation of considerations of saving time and money as the company should put most of energy and resources for the overall development.

Eventually, not any other approaches, upgrading current software is the solution satisfying all the mentioned requirements. This project offers better user experience as well as more functions integrated; reinforces IT security and enhances business operation. Strategically, Emma Matratze UK's prowess lies neither on IT service nor technology, their expertise is in sleeping products which also is the field they are very passionate about. Technology in this case is the software platform that plays as a tool, that towards employees, it functions its job of supporting customer service, order management and customer account management. Other functions such as website management; SEO; analytics and reporting; and marketing promotions are at managerial level. In general, at any perspectives, the current software can fulfil sufficiently functions that the business quests for. Hence, the expectations from the projects are optimizing business operation effectiveness and intensifying customer service performance quality and responsiveness by systematic tasks which are decreasing execution time, improving user interface, integrating more functions for internal use and boosting web and software platform performance to more advanced level. Upgrading current software not only brings to Emma reliability when the system will not functionally change much after the projects but also, financially, is a cost-effective solution for a young start-up.

The next part of this thesis focuses on successful and common practices when companies outsourced their IT functions. From there, it demonstrates a likely applicable solution for Emma Matratze case, in which they are struggling at the same difficulties. In respect of outsourcing processes, compliance and risks management, the author is going to propose a preliminary plan where Emma Matratze can use as a useful reference. Any IT approach has diffident potential risks that could substantially affect the business, IT outsourcing is not an exemption, even, it is weighted with higher risks associating with database security and confidentiality. However, two case studies below will elucidate how other organizations adopted this strategy and how superior the outcomes that the projects generated are.

## 7 CASE STUDIES

This chapter's ambition is to discover the similarities of outsourcing considerations and difficulties between the case study companies and Emma Matratze. Consequently, practices that were successfully applied can be adopted innovatively to Emma Matratze UK case. Besides, the two cases below depict how related outsourcing theories are exercised in reality. As in the earlier segment discussed, IT outsourcing brings countless benefits to organizations. However, many challenges and pitfalls existing in this business world nowadays could affect to the expected outcomes.

### 7.1 General Motor with multiple outsourcing strategy

As one of the most typical case studies in regard to IT outsourcing, General Motors with its strategies and excellent performance has been a successful example for all sized-enterprises when they face the problem of considering their IT development path. General Motors (GM), based in the US, is ranked the largest automobile company and known for the largest consumer of IT products and services (CNN library 2019). The company's policy is to focus on investing in information technology as a strategical management practice since they truly believe that with advanced technology, their operational and financial performances are going to get improved.

In 1984, GM acquired Electronic Data Systems (EDS) to take care of all the IT related issues of the firm. Later on, EDS spun off as a separate company, but, EDS still took account for the majority of GM's IT activities. The contract between them which was Master Service Agreement lasted for ten years and would get expired in 2006. Even though GM had other IT functions done from other suppliers as well, the majority of IT workloads, communication, and projects regardless of importance were dealt by EDS, who was basically the primary supplier of IT services for GM. This was appraised as a cost-efficient approach when handling entire GM's IT needs by working with just a single outsourcing company. In spite of the fact that the ten-year period of the contract had not yet come to an end, the outcomes yielded brought less satisfaction for GM when it

came to EDS's service quality. Plus, one of the reasons which was highly concerned was GM realizing that EDS had known deeply about GM's business operation as it involved in one of the most important sectors of the company. This matter potentially disclosed business confidential information and there inevitably came serious damage in the future. However, to find other suppliers that can deeply understand GM's needs as well as quickly solve their IT sudden problems was not simple and rapid enough to turn the situation around. Instead, it was long, effortful and circumspect progress to thoroughly and vigorously ponder upon.

In 2004, GM started inviting many IT vendors to bid for IT service outsourcing contracts. Soon enough, the company established a new department called Information Systems and Services department (IS&S) which has contributed to the main achievement in the shift from single supplier approach to multiple vendors management. The department was in charge of working with successful bid outsourcing companies to carry out all the IT projects supporting GM's business operation. It is not a random thing that the company leaned toward this method, actually in the past, many other companies such as HP, IBM, Sapient and CSC adopted multi-vendor outsourcing model to improve the efficiency, quality and cost effectiveness. To attain this successful transformation, the company set up two strategical phases: reorganization and controllability decrease.

In phase one, after reaching out to many vendors, GM started setting up fixed price contracts with them and both sides all agreed that any arising changes could be arranged and modified on semi-annual basis. To build requirements for vendors to bid, GM called help from vendors themselves to determine and authenticate key successful factors, then common benchmarks formed for all outsourcers. Next, things are hard to control unless they can be measured, hence, GM started placing those standards in progress measurement via company's Service Level Agreements (SLA). Parallely, meetings were organised regularly with vision of enhancing knowledge among parties and updating vendors' tactics and strategies in restructuring more effective operation.

During operation, GM applied report-card method to evaluate vendors' performance. The key parameters for this approach included pricing, service quality level, service delivery and the quality of relationship maintained with the company. The assessment was conducted once every half year and tallied in numeric fashion linking with surveillance to be added up into final rankings among suppliers. GM did a good job in keeping providers' motivation as well as saving their self-esteem when only highest ranked holder getting announced. On the other hand, GM was supportive in giving the rest of suppliers detailed feedbacks based on ranking scores and observation, then, from there, tasks and objectives were planned to acquire improvement in ranking. This method was approved as effective and impartial, so it is kept doing to enhance the tracking of suppliers' performance development over a long time.

In regard of how GM operated this assessment process, there were certain project managers, who worked mostly in supervising outsourcer's performance. According to project management history, the overall rate was achieved at 90% in fundamental criteria for all vendors such as time, quality and cost, plus, the company claimed that there were no IT related failures happened during the assessment period. To attain such exceptional result, all project managers took full responsibilities to administer the process, development and effectiveness of all projects. Having dashboards with details of deliverables, financial matters, schedules as well as performance quality of ongoing projects enabled the managers in grasping the gist of a big picture demonstrating all outsourcers' working process. There were two assessment approaches basing on project size, the most critical 20 projects were reviewed in daily basis and the rest ones were assessed every month. The company used colour codes as themes reflecting health of current projects, parallelly, alerted the outsourcers potential problems of their work. From there, GM coordinated with them in actively circling errors then planning and executing corrective actions along with improving the quality of the projects in general via monthly intensive meetings. Through this process, GM could identify gap skills, resilience, adaptability and capability of vendors when

confronting with problems and these evaluations would be added on forming decision for the next phase.

Having many vendors providing services at once consumed GM tremendous resources to manage and oversee such as work force, time and money; hence, the upcoming step could not be any other except “purging” unwanted and unsatisfactory vendors and continuing with the best performers to accompany in the long run. Besides, for GM itself, they wanted to decrease their controllability over vendors when everything has operated as smooth as gears have been put together. They could spend more time in other business aspects for company’s overall growth. Over a certain period of time, alongside with evaluations that GM had gathered so far while working with all vendors, the company built a strong foundation to select which ones deserve to stay. In 2006, GM planned to reduce the number of vendors to a half of present quantity which was around 80. At the same time, the company also encouraged chosen service providers to keep up with current quality of projects, aim attention at better maintenance and minimise perplexing upgrades.

After that, GM established a management model which was a three-layered pyramid structure to meet the requirement of loosening controllability over main outsourcers. From top down order, there were IS&S, top big vendors and secondary vendors, in where few top vendors would work in close association with GM and other various secondary contractors would be managed by the second layer. The company also started to allot new IT contracts with official outsourcers with the help of other big companies such as Accenture, IBM and EDS in setting up common templates for around 30 processes. This is concerned as a wise move from GM because the company believed that having certain standards would reduce cost significantly before proposals from service providers were made.



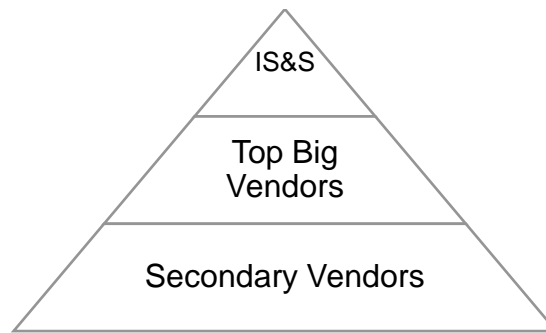


Figure 3 GM's outsourcing management model

The enormous change in IT operation consumed GM tremendous effort and time to accomplish, alongside with that were challenges that the company had managed to overcome. Inevitably, different vendors had variety of standards and specializations, not mention to implementing different technologies to carry out assigned projects, GM played both as mediator and supervisor to connect all the dots and standardise all processes to deploy the best capacity off their performance. On the other side, GM endeavoured to facilitate smooth cooperation amongst vendors since there were a number of projects in where about five to six companies joined in a same project. By creating common terms and conditions for all vendors, GM built common ground for all service providers, designed a supportive and communicative environment in order to enhance the quality of performance as well as final outcomes. Scott (2003), GM's chief technology officer commented: "At the end of the day, if I'm going to get the best total cost of ownership, I've got to get multiple outsourcers to support Oracle in the same way, I want a GM template for Oracle. It doesn't matter if it's IBM or EDS doing the integration work." Eventually, company's effort was compensated satisfactorily as company's provision was realised. They achieved their goals to make IT operation become more efficient and cost effective with their IT expense brought down from five billion dollars per year calculated in the year 1998 to around three billion dollars a year in 2003. Even though GM shrunk their budget on IT, they did not compromise on IT initiatives which was broadly appraised by many analysts in the industry.

GM's Chief Information Officer, Szygenda (2006) once expressed: "If you're going to be able to come back here five years from now and see if GM pulled it off. If GM pulls it off, it will dictate outsourcing methodology for the IT industry. If it

doesn't, it will be a great case study on why things didn't work. The IT industry's going to benefit one way or another". Indeed, this has been a brilliant example proving that GM's business operation concept is viable by adopting most pertinent business practices in association with strenuous execution of board managers.

GM's outsourcing strategy could be a great example for Emma Matratze, in which the company is facing similar issue. As explained and supported by many employees, choosing outsourcing is a modern and necessary decision to expose to cutting edge technologies currently available, not mentioning to decreasing IT operation cost and encourage the company to put extra attention to their expertise. Multiple-outsourcer concept is not new to Emma when the company has been utilizing the method to select the best business partners in several other sectors. However, detailing the processes that GM underwent can be a contributive idea for Emma to enhance the effectiveness in the selection process, essential assessment indicator determination as well as management strategies. Additionally, the challenges that GM confronted can help Emma foresee what kinds of difficulties awaiting if the practices being adopted, alongside with that, thorough preparation becomes an advantage for Emma in this huge internal shift.

## **7.2 Upgrading Magento software, the processes and expectation**

Company X was established in 2002 in Germany, providing services in customised tableware products by printing and carving. Website plays a vital role in X's business operation, which displays all the prototypes and enables transactions with their customers. The company had been operating their own business online via Magento version 1.9, an open-source e-commerce web application and a part of Adobe Commerce Cloud. The software has been a dominant choice comparing with other likewise technologies because of certain rationales. They are versatile content managing; mobile friendly configuration; advanced SEO; built-in upsells and cross-sells; easy third party integration (eBay, PayPal and Mail Chimp), furthermore, the platform lets administrators to drop in Google Analytics and similar tools to trace and track web traffic and record

customer's shopping experiences; customizing security permissions; boosting operational intelligence in order to grow sales and the foremost encouraging ground for enterprise to use this platform is that it is free of charge (Depuy 2014). The company considered that Magento has become an indispensable tool in their business operation, indeed, it is believed that the platform is only bridge that connects the company to their customers. With tremendous advantages that the software brings to the company, the owner did not have any intention to use other technologies rather than Magento, yet, he cared very much of the current cutting-edge technologies which drove him to the idea of upgrading Magento to the newest version.

Company X has its own business partner A which has always been responsible for the company's web application's maintenance and development. So, this time is not an exception for X as the company is reaching out to their familiar vendor, which officially registered as Magento partner. Not only that, A is one of the most outstanding developers in the field of e-commerce, having the capability of keeping platform's functionality smooth, facilitating performances and customizing it to the client's need by implementing certain variety of solutions. A is also an expert providing e-commerce services such as designing and imbedding analytics tools for the platform and SEO solutions. However, at this time, A only focuses on migrating full-packaged Magento 2 for their client, the company X.

The objectives of this project were set beforehand, which is absolutely important for both the client and vendor since this determines what the company X can expect from A and what were the main goals that could drive the vendor to perform their service in accordance with promised deliverables. The company X expected that this new update would maintain the same web theme design for X's product portfolio, all database is migrated into new Magento and all customised functionalities built ever since are kept and redeveloped.

Meanwhile, from vendor A's perspective, they realise that migrating Magento 1 to Magento 2 necessitates undergoing many stages. To meet the requirements from

the client, A divides the project into smaller segments to make sure that A does not skip or miss any to-dos. First segment is moving the database from the old platform to the new one which A plans to use the official Magento Migration tool to complete this. The database of the company X includes websites, stores' data, config setting for each store, products' data, customers' data, sales data (order, payment, invoice and delivery), content management system (CMS), tax data and SEO setups (meta data, redirects, title and descriptions). Second segment is migrating some functionalities which were customised earlier to the new platform. Because Magento 2 has distinct architecture comparing with the counterpart Magento 1, migrating those mentioned tailor-made functionalities has high possibility that they are not compatible to new environment, hence, writing code for the functions from scratch should be anticipated. Thirdly, store themes cannot be transferred to the new platform as a matter of fact of the difference of the architectures between Magento 1 and Magento 2; therefore, the shop owner has to either to search for a new theme to install or to redevelop a new similar theme from scratch. Later on, the company X agrees to buy a ready-to-install Magento 2 theme from another vendor, then, A will be responsible for testing the code of the theme and institute it to the new platform.

Now it comes to the stage of implementing the plan. After setting commitments with company X, A started to kick off the project by installing Magento 2 on client's server. As described earlier, A uses Magento Data Migration tool to transfer all client's data to Magento 2. They install and configure the tool in the empty newly placed platform with the help of other tool named Composer which is for dependency management for software using PHP, a programming language (Getcomposer.org 2019). Gradually, they manage to migrate all necessary data to Magento 2 which includes information of products, customers, orders, transactions, websites, store's information and important settings. Following mission of the project is to transfer custom-built extensions from the old Magento 1 store to the new platform. As company X has seven extra functionalities tailored in current software which signifies relatively heavy working load for the vendor in case of those expansions are not compatible with Magento 2. It is fortunate, however, that most extra functions are going well with the new

system. Some of them are delivery tracking tool, data feed manager and SEO suites. Finally, the last step for the vendor to complete the project is migrating the store theme to the new platform. As referred, the company X purchases a ready-to-use theme from outside so A can start installing the theme package to the platform promptly. However, before this step is a small test which is A lets their client to try and interact with those new theme effects by installing the theme on a plain Magento developer's site without any real data. The purpose is to perfect the theme before actually install it on Magento 2 store which is equipped with all data and functions by now. In this process, the client realises the price of products is displayed incorrectly so they contact the developer of the theme and later on they find out that the problem arising because of the bug from the default Magento Luma theme. Eventually, the developer from theme providing vendor builds a hot-fix custom solution to fix the issue.

The result of the project is satisfactory as the client expected. All data and functionalities are fully transferred to the new system and the new platform's interface facilitates efficient usability and interaction. Besides, thanks to new technology from Magento 2, the site operating speed is significantly improved, time for tracking and tracing data is shortened, website performance for both desktop and mobile is optimised, check out function is executed faster and most back-end functionalities are boosted to more advanced level.

Notwithstanding, in the process of implementing this project, arduous challenges abound, which required the vendor and the client constantly give more effort and initiative to generate solutions for the problems they confronted. For example, when the vendor moved data from Magento 1 to Magneto 2, due to the fact that they are located in different servers and the database in Magento 1 is operated via a socket, Magento Data Migration tool could not access to the database, the vendor had to ask their client to contact its hosting provider to consult solution but in vain. Eventually, the vendor had to make a copy out of database and use this source to migrate the database to new platform Magento 2. Also, there came a problem mentioned earlier that some expansion was not compatible with the new platform, how the vendor solved this matter was to pick up a package akin to

current one from an open source to maintain the function. There were many more matters arisen in the process, on the other hand, eventually the vendor satisfactorily answered fundamental requirements as expected. In retrospect, the then sales manager of X, expresses his gratitude to A's service through these years since 2011 as always so helpful, patient and professional by answering their questions.

This case study is definitely a good example for Emma Matratze as it shows the brief process of outsourcing a software to be upgraded and maintained. Surely, the situation might vary from one to another but acknowledging certain standards and processes in advance enormously helps the manager to imagine and grasp the gist out of whole complex technological concepts which are more likely for specialists in IT field.

## **8    OUTSOURCING STRATEGIES**

From the two case studies presented above, this segment dedicates on how Emma Matratze UK can learn from their mistakes and exploit their good practices. Combining with the interview analysis segment and grounded theories interpretation in earlier chapters, the answers to the critical questions stated in the beginning of this research now can be clearly addressed.

Firstly, Emma should keep the open source platform the company has been using for its internal operations, as the technology sufficiently supports primarily all the needs that Emma's operation requires. On the other hand, the staffers are already familiar to the interface of the program, proficiency gained from long use makes employees feel comfortable working with the tool. Beside maintaining all the functions that the platform offers, the company can implement further innovation and extensions to the software by upgrading it to the newest version which enables smoother website performance, faster data transmission and more effective operational optimization. Strategy to be used for implementation of this renovating plan is accessing to IT vendors' services, in other words, applying IT outsourcing practice. This alternative comes as the solution after an in-depth analysing process and thoroughly weighted considerations. This approach not

only potentially brings favourable benefits to the organization, but also, simultaneously iterates the initial common suggestion from interviewed employees. It creates opportunity for Emma Matratze UK to focus on their key competence, save more resources in comparison to having IT personnel working on-site and access to IT specialised experts. This chapter is designed to realise how the processes are after the decision has been made. Considering to Emma Matratze UK possibly has not involved in such business, the following presentation plays as a guideline for the company at the preparation stage. Detailed implementation plan and proposed actions are demonstrated as below.

### 8.1 Proposal of the outsourcing process

The below graph demonstrates the process with the main steps that General Motors executed to achieve their success in transforming current IT operation to complete outsourcing, combining with suggestions from the author to make it become an applicable version for Emma Matratze UK.

Phase	Deployment steps	Purpose/Clarification
Deployment and evaluation	Identifying needs	This step is taken when the company starts to have intention to outsource one segment/function of the company. Defining the criteria and actual needs helps the company easily set benchmarks to evaluate vendors and express expectations
	Reaching out to potential vendors	To access as many sources as possible to gain certain benchmarks, assessment indicators and close surveillance into their expertise
	Setting up temporary contracts	To bind with vendor certain ground rules and quality guaranty before starting cooperation

	Designing assessment methods (multi-factor scoring method or report-card method)	To assess vendors' performance. Note that any method used must consist of detailed parameters and indicators which can be rated, ranked and measured by one persistent unit such as numeric fashion
	Starting to implement plans	At this step, the company needs to be both as a mentor in helping vendors getting to know the company's systems and relating technologies and a supervisor who oversees vendors' performance, making sure treating to all partners equally and impartially
	Evaluating	Utilizing approaches that planned initially to assess vendors' capability and behavioral levels. The assessment should be conducted in periodic cycle to be fully aware of the development of the projects as well as the improvements that the vendors attained through time. This step is very fundamental in order to support the company in selection phase and must be done parallelly while working with vendors, avoid doing evaluation when the projects are completed
Selection	Enhancing communication	Meetings are necessary in order to keep all parties informed how the projects are going and to update achievement as well as challenges that both vendors and the company encounter. Similar to evaluating step, meetings need to be held frequently. Also, through meetings, the company has opportunities to inform vendors how they



		perform and evaluate the progress of the projects. From here, recommendations and adjustments are made for better final outcomes
	Finding long-run partners	After a certain amount of time which is enough for the company to get the idea of which vendor has the best performance as well as keeps good relationship with the company
	Announcing the chosen vendors and starting the official contract	Until now, the company must have had enough foundations and reasons to choose the right outsourcer already. Then, the step of making the official contract is very important, common and effective practices to be added into terms and conditions should be under consideration. Besides, the legal issue in the contract should be mentioned because it is vital for all parties
	Negotiation	At this point, before signing the contract, negotiation actually happens when both sides want to reach the most favourable terms
	Managing relationship	This step lives with the company long ever after until the vendor stops providing services to the company. Managing relationship is necessary and plays a pivotal role in partially deciding the quality of service.

Table 12 Proposal of outsourcing process

## **8.2 Vendor relationship management**

Outsourcing relationship normally lasts for several years which can be a challenge for the organization to manage. The relationship among parties is likely to become successful when transparency and active communication are maintained back and forth. It is recommended that both client and vendor have communication from similar management level, in other words, personnel from one organization holds corresponding position to another's. The conformity between these two parties promotes mutual respect as well as seriousness and professionalism for the outsourcing performance.

In case of problems, both sides should keep good respective attitude towards the counterpart, support and actively discuss to solve the issue as quick as possible with the aim of ensuring the process goes with agreements. While implementing outsourcing activity, different perspectives and new ideas might arise, sometimes these become disputes, the best solution at the time is to follow provisions and conditions in the contract as negotiated from the beginning.

Cultural appropriateness is one of the most typical issues that either fosters or deteriorates outsourcing relationship among vendors and customers. Even though in the modern world, we do not hear much of cultural conflicts between IT service providers and their clients; it still could possibly happen in a subtle way. According to Leitner and Kayworth (2006, 360), cultural issues might arise from the development, adoption, use and management of IT. Hence, the organization should take extra heed on considering whether the supplier's attitude aligns with its business objectives.

The foundation of a good IT outsourcing relationship is primarily established in pre-contract phase. Certain standards and principles should be articulated and acknowledged from the beginning. Mutual understanding between parties supports the organization to investigate further if the vendor can be a perfect companion in a long run.

### 8.3 Risk management

Implementing outsourcing, especially in IT service, always comes with risks attached. The whole project can turn into a failure if risks and threats are ignored. Risk management is a wider step after the organization has performed risk assessing and identifying. Risks come with many sorts and arise at any stages as outsourcing activity is executed. They range from strategy, technology, compliance, operation to finance. Hence, the risk manager should acknowledge common strategical principles to minimise risks to happen.

Firstly, there must be an intensively thorough understanding about the scope, functions and objectives of the project to avoid misalignment of business goals and misunderstanding of outsourcing methodology. When the ambitions are shared among vendors and customers, collaborative harmony is created to facilitate performance effectiveness and enhance outsourcing relationship.

The risk management manager is supposed to be aware of cultural risks which are likely to happen regardless of the level of seriousness of the issues. That means risk can occur over the deceptively simplest matter. Because cultural problems are results of differences in languages, norms and preferences, when working with other organizations, especially with foreign providers, managers need to concern that those differences can possibly bring trouble for the organization. Therefore, they should raise their consciousness of this topic as well as have a contingency plan for those scenarios.

Nowadays, risks can come very fast to the point that people do not even know there was a risk until the problem is actually escalating. One of those breakneck incidences is related to IT, for example, a world scaled cyber-attack or a breach in Microsoft system which can spread too expeditiously that firms could not respond soon enough. For that reason, the organization should encourage staffers to develop sufficient IT skills, so they can correspondently counter to those severe incidences, or at least, minimise their bad effects.

The organization must understand that risk management requires many sources to guard the business from potential threats as they range in many types and arise in any situations. Hence, it is very important to be as much responsive as possible in any aspects, especially when the organization is accessing or shifting to a new environment. These such events can bring both business opportunities and risks, hence being prepared and being alerted are essential in every leader before challenges.

## **9 IT OUTSOURCING LEGAL ASPECTS**

This chapter is written with the purpose of providing essential legal information for Emma Matratze's acknowledgment. Understanding fundamental sectors which are required in common legal documents benefits the enterprise in accessing and managing outsourcing services and relationships.

### **9.1 Outsourcing contract**

Contracts are necessary for any cooperative business activities which guide and manage all involved parties in order to drive their performances towards expected outcomes. A contract consists of formal terms and conditions which are drawn up and agreed between minimum of two parties. It regulates stakeholders in negotiation, rights and responsibilities under legal enforcements. In the event of breach of the contract, the legal provisions coupled with bilateral agreements that were addressed in the contract determines the level of compensation and remedies for the injured party. Burnett (2009, 27) gives three fundamental benefits from having a proper contract, especially in outsourcing IT service. Firstly, it serves as a guideline for the negotiating process. All matters regarding to the service/goods transaction should be mentioned and clarified with detailed processing procedures. This preparation definitely helps to usher solutions as well as foundation for further improvements in the course of the ongoing project. Secondly, during the provision of the service, the contract is a source of reference for charging methods, benchmarks service quality and assessment procedures. From there, the organization can evaluate supplier's performance together with success level of the project. Finally, the contract plays as a legal

bond indicating a relationship between parties and showing each party's rights and obligations to be fulfilled. Therefore, when there are any responsibility failures and relationship deteriorations during the implementing course, the contract is legally enforceable in any cases. A good contract document must accurately express components of the transactions that parties believe that they have made. Simultaneously, operational and technical matters, measurements and deadlines must be included in the document, which are essentially conducive to final analysis. Nonetheless, the contract can be renegotiated when different perspectives and opinions might arise later on. The contract document might never be perfect, yet, it can be drawn up carefully to meet certain sufficient standards covering primarily potential matters.

## **9.2 Creating a contract**

After the selection process in which the right supplier was determined, drawing up a contract is necessary to start outsourcing IT service. There are several preparation steps that an organization should heed to have an appropriate IT outsourcing contract. The contract draft can be crafted by any sides, yet, all concerned parties should be invited to improve and even negotiate before reaching to the final agreements.

Typically, the provider will draft the contract since they understand technical tasks to be delivered. Moreover, the outsourcer must have handled many clients, therefore, contract frames might be available to apply for a new client by develop the contract draft further depending on the case. From client's requirements, they engineer solutions which will be applied as the outsourcing activities start. Tools, technologies as well as methods of carrying out the job should be mentioned in the contract not too detailed but enough to ensure transparency and support charging calculation. The whole job surely comprises series of stages and processes to gradually achieve customer's imagination. Hence, each phase should be followed by specific objectives and expectations which also can be designed as an evaluation process in favour of the final analysis.

However, in different scenarios, when the client is responsible for writing the contract, certain consultation and deliberation with professionals and specialists in the field are obviously imperative to draft feasible outcomes. Plus, discussion with outsourcers is necessary to generate the best fit strategies for the organization at the time. On the other hand, the presence of a lawyer in this step is important to keep all agreements complying to the law system which eventually helps all involved parties circumvent legal breach.

### 9.3 Terms of an outsourcing agreement

Even though it is possible to have lawyers and IT consultants support drafting an outsourcing contract, knowing several terms and fundamentals of a contract is definitely beneficial for an organization. The board members should familiarise themselves with main legal issues in regard to outsourcing to execute the activities better. According to a study titled: “Legal Issues in Outsourcing: What Businesses Should Know” of Sion Kim, Rider University, the author gathered basic terms which should be included in an outsourcing contract. These terms are supposed to be negotiated to gain agreements among parties.

1. The Term of the Agreement
2. The Service to be Provided (scope of the agreement)
3. Ownership of Intellectual Property (“IP”)
4. Ownership and Confidentiality of Data and Trade Secrets
5. Delegation of Responsibilities
6. Warranties and Indemnities
7. Disclaimers
8. Force Majeure
9. The Choice of Law and Jurisdiction
10. The Termination Clause

Table 12 Terms and Agreements in an Outsourcing Contract (Kim 2019, 2)

Firstly, *Term of Agreement* indicates the continuity of the outsourcing relationship, which is, in other words, the duration of the service.

*Service to be Provided* is one of the most noteworthy segments in a contract. In this part, the contents that must be highlighted are the scope of the project, customer's expectations in detail, as well as main measurables for outsourcer's performance. These set forth indicators not only are benchmarks for deciding if outsourcing is a success or a failure, they are also valuable criteria for outsourcing relationship management though out the entire process. In reality, this part is commonly paired with Service Level Agreement (SLA) which was explained in the prior part of this thesis. It is understood as a fundamental document alongside with the main outsourcing contract, including parameters determining how tasks are performed and evaluated. This is also a set of service quality dimensions that consists standards, objectives, tolerances, penalties and rewards. When the provider gives a commitment of offering a certain service, this obligation is associated with providing the service in accordance with the service levels (Burnett 2009, 72). However, the standards of the service can be changed while outsourcing is being undertaken; the opportunity to change and amend SLA should be mentioned in the main outsourcing contract. Another aspect should be noted in this document is that it is necessary to specify who is going to evaluate provider's performance and methods going to be used to measure service levels. Suggested by Burnett (2009), there is a standard for IT service management named ISO/IEC 20000. When an organization gain certificate of this standard, it means the organization is proven of having best practice and professionalism in IT service management. Besides, the person(s) who is going to assess vendor's performance needs to know specific parameters in associated to service levels beside ITO effectiveness and quality. They are service hours, volumes and capacities, exclusions, maintenance and support, help desk, system development service, education and training, back up arrangements. Those criteria should be measurable which is when they can be evaluated by asking questions such as how frequent, what is the level of availability, is it sufficient and what is the degree of satisfaction of the outcomes.

*Ownership of Intellectual Property (IP)* matters should be discussed before undertaking the outsourcing agreement. It is considered as a pre-determination of

ownership which is obligatorily specified in the contract in terms of IP assets. The IP assets might change while outsourcing activities are proceeded.

*Ownership and Confidentiality of Data and Trade Secrets* should be expressly protected by an outsourcing contract. It includes requirements of confidentiality and integrity, personal data related obligations, means for handling data, relevant regulatory bodies in regard to security management and data leakage recovery plan. In the contract, all parties must agree on which Data Protection Acts will be applied while outsourcing activities are undertaken. Couple of sources for both customers and providers to review and legalise their contracts are *Data Protection Act 1998* and *Directive 95/46 EC* on the protection of individuals with regard to the processing of personal data and on the free movement of such data. These principles are a code of practice which ensures the legitimation while handling personal data and individual right of privacy. Besides, other data that is considered as trade secrets consists of business structure, financial data, staff and technologies used. All involved parties should detail such information to be treated with care and certain provisions to be followed. In aspect of information security management, assessing to data and computing system should be carefully authorised. When the supplier needs to access the organization's system, proper access entitlement should be granted in consideration of complying certain rules. Passwords are only provided for users and the access permission should not be permanent.

*Delegation of responsibilities and warranties* are necessary when forming a contract. These sections are inevitable, in which they redefine what is the outsourcing relationship among parties about. Similar to the *Service to be provided* part, it shows provider's commitments, however, with a more specific version. The responsibilities from the vendor are executing and performing assigned tasks to achieve customer's expectations that were set from the beginning. The customer is obliged to pay remuneration for the supplier and ensure that reasonable terms required by vendor namely IP assets are followed. Then warranties are promises which expectedly indicate that the vendor will provide the services as defined in the contract and the customer will pay for



vendor's services. Furthermore, this segment should include simulated scenario when the warranty is breached, the contract should refer how the legal liability will occur and specify vendor responsibilities as well as customer's right to claim.

Meanwhile, *disclaimers* are contractual provisions that limit outsourcer's rights and obligations, whereby uncertainties and external risks happen. To Sion Kim, the most popular disclaimer in an outsourcing contract is the declaration that provider will not be responsible for the changes and incidental damages from third parties' software or services. The customer supposes to accept vendor's disclaimers and reassure that those terms are not contrast to *Responsibilities* and *Warranties*.

*Force Majeure* exempts a party from performing their obligation when a great major unforeseen event occurs, which is beyond the party's controllability such as natural disasters. When negotiating these clauses, the customer should request the vendor to name such potential events in the contract, some specific examples of acts which clearly help all parties in acknowledging that only those clauses can be used for excusing outsourcing's failure.

The *Choice of Law and Jurisdiction* should be carefully considered. If the vendor and the customer are under a common legal system, it determines that jurisdiction over disputed can be solved by applying legal provisions from the host country. However, if the vendor or customer is exclusively oversea, choosing law to include in the contract is not only a right of choice, but also is a problematic issue for both sides. They must answer two questions, which are: Which country will have the jurisdiction and which country's substantive law will be applied to the disputes? If there comes a case that both sides are not satisfied with the counterpart's legal bodies, an alternative is to apply arbitrary from a third party to solve the dispute.

Termination clause is very important in an outsourcing contract which basically includes set forth conditions that the customer may exit the outsourcing relationship. The reasons for such event might be financial crisis, material

breach, failing to meet service and performance levels, insolvency or loss of license. The conditions in this segment allow the customer to end the outsourcing relationship earlier than the contract period. However, terminating a contract requires serious consideration since it causes all sorts of problems for both parties. For the vendors, obviously they will lose a job opportunity. Yet, for the customers, stopping the current contract will not only generate business discontinuation, risks of data leakage, interrupting productivity; but also finding an alternative vendor necessitates more time and costs possibly more. Even though, at the time when all stages regarding to choosing a satisfactory supplier were successfully implemented, articulating a clear exit strategy and elaborating related procedures of ending the contract before outsourcing activities start is very essential.

## **10 CONCLUSION**

Based on the findings that the author has worked on, the thesis positively brings useful information as well as presents common practices in IT outsourcing for Emma Matratze UK's preference. The mission of the thesis is to guide the company to a better decision among alternatives of having in-house IT function and outsourcing IT service. Associated with the trend at the time, the reality that Emma's business competence does not lie in IT products and services has oriented the outcome of the thesis to the choice of hiring IT vendor to upgrade their software system. The decision is also supported by the opinions that all randomly selected staffers expressed in the interview section. Moreover, Emma Matratze UK is still a start-up, even though having many achievements in their field, investing in having an on-site IT team or just personnel is not a wise choice due to time and money consuming, not mentioning to recruiting a poor qualification employee. In addition to that, the company's operation is affirmed that working well with current order volume and the software that is in use is sufficient to serve current number of customers with standard inquiries. Therefore, upgrading current software for better user convenience is more strategical to the company at the time. The objectives that the manager is concerning are shortening time of retrieving data, smoothening site speed and upgrade back-end functionalities to improve the business operation. These

expectations can be fulfilled by professionals from a certain vendor, who actually performs the service to many clients before.

In regard of the thesis writer, she met many challenges to deploy this topic as she must do variety of researches about IT outsourcing with many specialised terms and practices. The topic seemed vague and unclear to her as initially she did not know where to start, however with the attentive support from her supervisor, she gradually imagined how her thesis is going to be. Besides, when she interviewed Emma Matratze's employees and the IT personnel, with humble amount of IT knowledge, she could only ask general questions without detailing technical issues. Hence, this shortage can lead Emma to the next step of studying more specialised topics to ensure that the project is implemented and managed with the best expertise. With those weaknesses of this study, however, the author tried to demonstrate and suggest the best common practices, and provide procedure examples for Emma to further develop its strategy for the project. Considerations and issues that the company should pay attention to are also introduced for the company's better preparation.

For the future research on the matter, the thesis will gain more credibility when there are more interviews with IT experts and clients who have used IT outsourcing services to gain more detailed insights of outsourcing benefits and challenges. Besides, even though the author has tried to find several legal sources for IT service management and data protection, there must be other more practical and beneficial legal regimes for start-ups, hence, further research for more suitable choice of law definitely contributes to the company's success in this project. On the other hand, more study on risk management should be conducted in the purpose of having well-rounded outsourcing plan, in which risks and threats are carefully contemplated and controlled.

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## Email Exchange with interviewee A

1. Have you ever had any problem with Magento? If yes, what was it?

Overall, I did not have any issues with Magento, although it can be a complex system. I was only involved with customers order information.

2. How do you feel using this platform while performing your task? (hint: all functions needed are not integrated in one single software, remember we had spread sheets for mattress disposals, another site for instalment thing?, real time of order's status...)

I felt it was a good software, however, we did have separate sheets to record other information, but later in my internship, I found out that more things could be integrated our team just did things differently.

3. Do you think Magento is out of date?

To be honest, I could imagine a more intuitive software available, so my response would be that it is out of date. On the contrary like most complex systems, they are never aesthetically pleasing or easy to use (think SAP).

4. In e-commerce environment, what do you feel valuable the most to meet customer's expectation regarding to Emma's services? (excluding Emma's products) (ie: responsiveness, time consumed to solve problem...)

I think the number one show is that you are doing your best to solve the situation, if a customer understands that you as a customer service agent is doing everything in your power to solve an issue then it's really a bad customer if they can't understand that but not a bad service from Emma.

5. Do you think on-side developers working next to Emma UK team necessary?

No, it's a start-up they need those resources elsewhere maybe in the future it would be nice.

6. What do you want to upgrade Magento (simulating that you are still working with Emma)?

Possibly the ease of use of it, more intuitive like an app, that way they would need to spend that much time teaching the new interns.

## Email Exchange with interviewee B

1. Have you ever had any problem with Magento? If yes, what was it?

The only problem that I can recall with Magento was that sometimes it wasn't very user-friendly and often didn't update fast enough to be useful.

2. How do you feel using this platform while performing your task? (hint: all functions needed are not integrated in one single software, remember we had spread sheets for mattress disposals, another site for instalment thing?, real time of order's status...)

Using Magento alongside other tasks was useful because we were able to link many necessary things together using the information in Magento.

3. Do you think Magento is out of date?

I think that maybe Magento could be updated a little bit to be more efficient but generally, it's a good program.

4. In e-commerce environment, what do you feel valuable the most to meet customer's expectation regarding to Emma's services? (excluding Emma's products) (ie: responsiveness, time consumed to solve problem...)

The most valuable thing in regards to the customer I think is responsiveness. Customers greatly appreciate rapidity and efficiency.

5. Do you think on-side developers working next to Emma UK team necessary?

Yes, I think it is vital to work with developers and other people in order to create a good company and product for the customers.

6. What do you want to upgrade Magento (simulating that you are still working with Emma)

Magento is a great place to keep all the information needed for customer service, but it needs to be faster at updating the information so that we can help customers faster.